

UROSKOP ACCESS

SP

Replacements of Parts

System

Basic Unit and Imaging System

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Document revision level

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General information

Notes

- Depending on the system version, the illustrations and drawings may deviate slightly from the actual system supplied.
- Damaged or worn parts must be replaced by original parts only.
- Sluggish movement will cause the system to be shut down by the safety software.
Therefore, clean and lubricate the rails and guiding parts, check the chain and toothed belt tension of the respective drive, check the function of the brakes and, if necessary, remove any abraded particles.

Safety information

General safety information



WARNING

Danger of damage to property, injury, death!

Non-observance can lead to damage to property, injury or death.

- ⇒ **Observe the general safety instructions in this document, in the document “Medical Products; Safety Information; System” (TD00-000.860.01) and the safety instructions according ARTD part 2.**

General safety information - electrical



WARNING

Electrical safety!

Non-observance can lead to damage to property, serious injury or death.

- ⇒ **After opening the covers, live parts are accessible. To prevent hazards, the system has to be disconnected from power line prior to opening covers.**
- ⇒ **If work is required while voltage is live, the general safety instructions according document “Medical Products; Safety Information; System” (TD00-000.860.01) have to be observed.**

NOTICE

Ground faults may destroy the BUC (Basic Unit Controller). In some cases, the BUC inputs for potentiometers and proximity switches are not short-circuit-proof and ground-fault-proof.

- ⇒ **Always switch off the system before replacing parts or performing checks.**


CAUTION
Live parts!

Non-observance can lead to damage to property.

- ⇒ Observe the ESD guidelines for working on the system.

Safety information - radiation

WARNING
Radiation!

Non-observance can lead to illness, irreversible damage to body cells and genetic structure or death.

- ⇒ During work at the system, when radiation has to be released, the safety and radiation protection guidelines according ARTD part 2 (ARTD-002.731.02) have to be observed.
- ⇒ Ensure that existing radiation protection devices are used, radiation protection clothes are worn, the distance to the source of radiation is as great as possible, radiation is only released if necessary, the set-up values are as low as possible (low kV and mA values, short switch-on time).

Safety information - mechanical
CAUTION
Danger of burns at hot parts or components!

Non-observance can lead to light or medium burns, especially to the hands.

- ⇒ After opening cover parts, components (especially cooling elements, high-performance parts) are accessible which can show temperatures > 50°C.
- ⇒ To prevent burns by touching parts and components, the system has to be switched off and must cool down for at least 5 minutes.

CAUTION

Danger of injuries on mechanical parts! After covers are opened, parts like plugs, threaded bolts, shortened cable fixtures and edges of components can be accidentally touched, possibly resulting in contusions, abrasions and cuts of the skin, especially of the hands.

Non-observance can lead to light to medium injuries, especially to the hands.

- ⇒ Carry out such work with special caution.
- ⇒ Wear suitable protective gloves.

Safety information - risk of infection



Risk of infection by bacteria/viruses!

Non-observance can lead to severe injuries and even death.

- ⇒ This product can be contaminated by infected blood or other body fluids.
- ⇒ Avoid all contact with blood or other body fluids.
- ⇒ Strictly observe the safety information in ARTD part 2 (ARTD-002.731.37) regarding prevention of infectious diseases during customer service calls.

Lubrication points

- Before performing any adjustments, check the condition of all accessible chain and spur gears, sliding and rolling guides and, if necessary, lubricate them with Longtime PD 2 (unless otherwise stated).

Preloading the ball bearings

- The supporting and guiding rollers are adjusted such that the unloaded guiding roller can be moved by hand.

Securing the screws

- When using Loctite, ensure that none of the locking sealant accidentally seeps into the bearings.
If this has caused a bearing to become jammed, it will not be evident until days later.
- Loctite can be removed by applying heat (hair dryer, etc.).

Notes on adjustments

NOTE

After each adjustment or replacement of parts, the function test prescribed either in the XCS SSW or in the UROSKOP Access SSW must be performed.

Abbreviations

Calc.	Calculation
cont.	Continuous
DPF	Digital pulse fluoroscopy

DR	Exposure
esp.	Especially
FLC	FLUOROSPOT Compact
Fluoro	Fluoroscopy
f/s	Frame per second
IEM	Image evaluation mode
I.I.	Image intensifier
FW	Firmware
LIH	Last image hold
OGP	Organ program (service organ program)
p	Pulse
ROI	Region of interest
SSW	Service Software
SW	Software
UI	User interface

Product-specific notes

Contents of the service and system software

NOTE

Using the compatibility list included in the shipment, check the compatibility of the SCU (XCS-), SSW-, System SW and FW versions.

- Connect the PC to the XCU with the service cable.
- Start the XCS SSW.
- Select "Info".

Notes on image quality assurance

NOTE

After each replacement or adjustment of components of the imaging chain, an Image Quality Quick Test (SPL5-330.820.01; for ASPIA imaging system) and/or the IQAP (SPL5-330.820.02; for FLUOROSPOT Compact imaging system) must be performed.

In addition, the tests required under the X-ray regulations of the relevant country (e.g. USA (DHHS), Germany (§16 X-ray Ordinance)...) must be carried out.

When programming the XCU, the ionization chamber "Kerma X" must always be programmed as present, regardless of whether this option has been installed or not.

Required aids and tools

NOTE

All tools, measuring and auxiliary devices with the exception of the standard installation tools are listed in the Service Tools Catalogue (part of the Spare Parts Catalogue).

Allen wrench set for flat-headed screws	81 59 980 RE999
BIOS CD (for ASPIA imaging system PC Celsius M410 only!)	83 80 441
BIOS CD (for ASPIA imaging system PC Celsius 444)	77 13 111
CD "Help-File FLC" (for FLC imaging system only!)	SPL5-330.880
CD "UROSKOP System SW CD" (for FLC imaging system only!)	77 57 656
CD "XCS Service SW Tools"	RXD-000.801.02

Centering cross	96 60 051 RE999
cm scale	n.a.
Loctite 221 (for threaded connectors)	20 48 874
Longtime PD2 (tube 20 g) (pressure lubricant for long-term lubrication of bearing cages, open ball bearings, chains, cables, etc.)	34 91 271
Multimeter (e.g., Fluke 8060A)	97 02 101 Y4290
Slide gauge	n.a.
Spotmeter for SMFit	77 52 848
Spring balance 100 N	44 29 122 MH029
Torque wrench up to 100 Nm	44 30 906 RH090

Maximum tightening torques (table)

		Screw material						
Nominal diameter of thread		Steel acc. to DIN 267						Brass CuZn alloy
		4.6	4.8	5.8	8.8	10.9	12.9	
	Property class							
M 3		0.5	0.67	0.83	1.3	1.9	2.2	0.62
M 3.5		0.76	1.0	1.3	2.0	2.8	3.4	0.95
M 4		1.1	1.5	1.9	3.0	4.2	5.1	1.4
M 5		2.2	3.0	3.7	6.0	8.4	10.1	2.8
M 6		3.8	5.1	6.4	10.2	14.4	17.3	4.8
M 8		9.5	12.6	15.8	25.3	35.6	42.7	11.9
M 10		18.7	24.8	31.1	49.8	70.0	84.0	23.3
M 12		32.9	43.8	54.8	87.6	123.3	147.9	41.1

- When checking the fastening, use the appropriate tightening torques of property class 8.8.
- A tolerance of $\pm 10\%$ is permissible for tightening torques stated.

Replacement of mechanical parts and adjustments

NOTE

After the adjustment of mechanical components, a function test must be performed.

All mechanical adjustments are described. The requirements (e.g., accessibility of the component) are stated only briefly.

Detailed information is given in the corresponding sections describing the replacement.

Corrective measures / settings

- In several places in the document, reference is made to the XCS SSW for corrective measures and settings.
- Select **Components > Urooskop** in the XCS SSW and subsequently **Adjustment**.

Required documents

ARTD "Safety and Radiation Protection Guidelines"	ARTD part 2 (ARTD-002.731.02)
ARTD "Prophylactic Measures Against Infectious Diseases During Service"	ARTD part 2 (ARTD-002.731.37)
Installation and Startup; System; Urodynamic Interface/Scan Converter	SPL5-330.814.01
Installation Instructions; System	SPL5-330.812.01
Installation instructions; TFT Pendant system UROSKOP Access	151 98 92
Installation instructions; TFT Pendant system UROSKOP Access	150 88 74/02 - 2003
Medical Products; Safety Information; System	TD00-000.860.01
POLYDOROS SX65/80; Adjustment and Configuration	RX63-055.842.01
POLYDOROS SX65/80; Installation and Startup; KermaX Area Dose Product Measuring System	RX63-055.033.04
POLYDOROS SX65/80; Replacement of Parts	RX63-055.841.01
Quality Assurance; IQAP (for FLC imaging system)	SPL5-330.820.02
Quality Assurance; System; Image Quality Quick Test (for ASPIA imaging system)	SPL5-330.820.01
Replacement of Parts (of the applicable monitor type)	TD00-000.841

Startup; System; for ASPIA Imaging System	SPL5-330.815.01
Startup; System; UROSKOP Access Imaging System	SPL5-330.815.05
Startup; System; for FLUOROSPOT Compact Imaging System	SPL5-330.815.06
Troubleshooting Guide; Endoscopy Option	SPL5-330.840.01
Wiring Diagrams (From Serial No. 01098)	SPL5-330.844.92.01
Wiring Diagrams (From Serial No. 01140)	SPL5-330.844.93.01
Wiring Diagrams (From Serial No. 01188)	SPL5-330.844.02.01
Wiring Diagrams (From Serial No. 01211)	SPL5-330.844.03.01

Covers

NOTE

Detailed instructions for removing and attaching the covers can be found in document "Installation Instructions; System" (SPL5-330.812.01).

Make sure that the cover screws have the correct lengths. Otherwise there is a risk of damage.

To remove the covers, it is at times necessary to move the unit, especially the table top. To remove the covers it is therefore sufficient to actuate the EMERGENCY STOP of the unit on the table or on the lifting column, and to release the EMERGENCY STOP when movement is required.

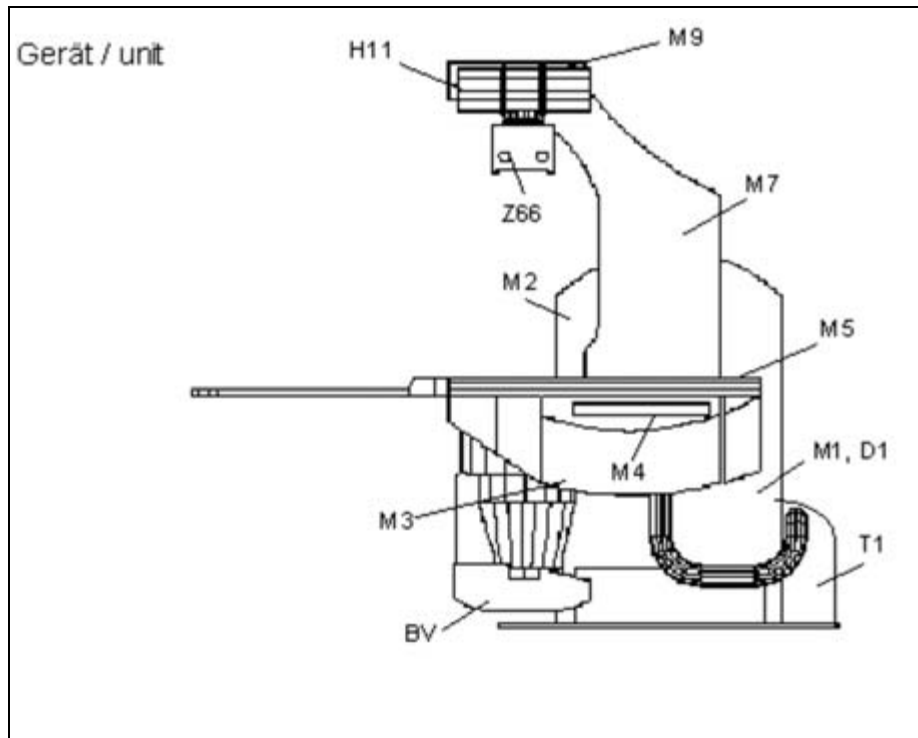


Fig. 1: Components

- The locations of the UROSKOP Access components are shown in [\(Fig. 1 / p. 13\)](#).
- After the removal/attachment of the I.I. protective cover, perform a function check of the collision protection switches.
- The unit paneling (M7) must be inserted laterally. Watch the cover of the tube support arm to prevent it from being scratched.
- All rubber seals must be properly in place on the covers.

Image Evaluation Mode (IEM)

NOTE

This subchapter only applies to the FLC imaging system.

Some measurements are performed with the implemented “Image Evaluation Mode” (IEM). To access the IEM the following steps are necessary:

- Store the LIH image via the **Store** button for evaluating a fluoro image (Fig. 2 / p. 14).
 - This is not necessary for evaluating DR exposures.

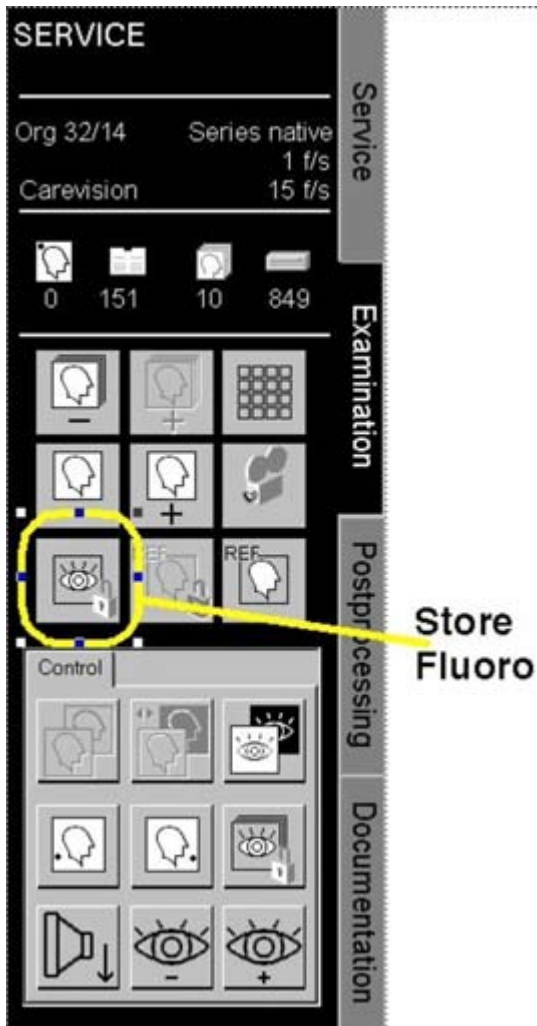


Fig. 2:

- Select the **Patient** task card and the **Settings** sub task card and press the **IQ** button
(Fig. 3 / p. 15).
 - The display will change to the **Postprocessing** task card (Fig. 4 / p. 16).

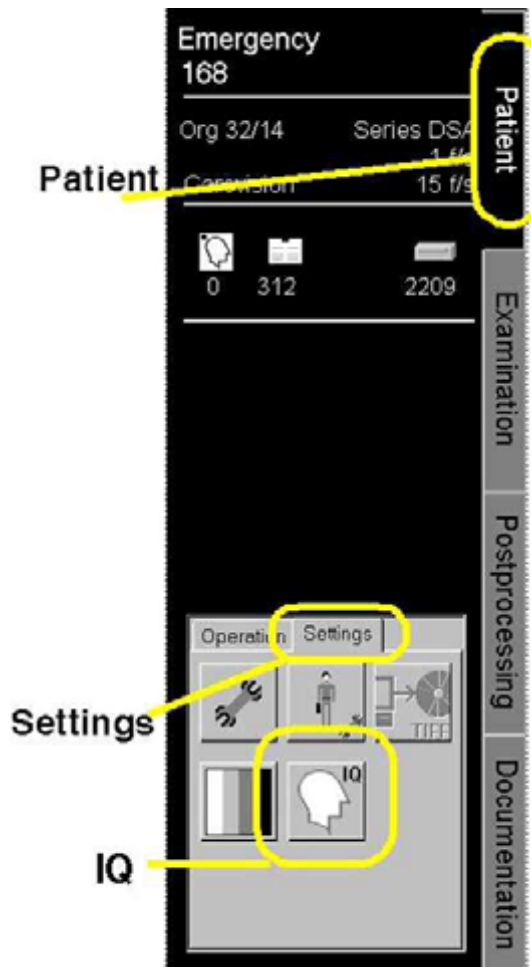


Fig. 3:



Fig. 4:

The display will show the last stored image (LIH or exposure) and in the operation area buttons to evaluate the image.

Image evaluation functions

- ROI 20: displays an ROI with 20 x 20 pixels. You can move the ROI to any position in the image.
- ROI 50: displays an ROI with 50 x 50 pixels. You can move the ROI to any position in the image.
- Line profile: displays a horizontal line plot.
- Remove: removes all ROIs and/or line plots.

Service Organ Programs

NOTE

This subchapter only applies to the FLC imaging system.

On UROSKOP Access systems, 4 different service organ programs OGP 1 - OGP 4 are stored and accessible. The parameters of the service organ programs are listed in the document “Quality Assurance; IQAP” (SPL5-330.820.02). To select one service organ program, just select the OGP from the list box (Fig. 5 / p. 17).

- Enter the FLC service mode.
- Select the **Examination** task card and subsequently the **Settings** sub task card.
- Select the **Organ program** button.

⇒ The following window appears (Fig. 5 / p. 17).

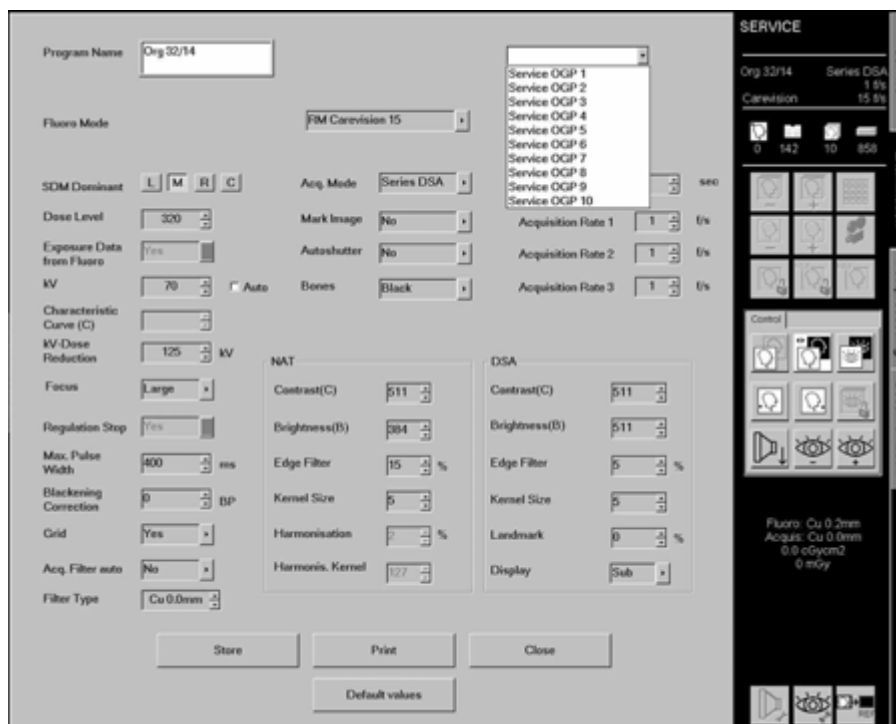


Fig. 5:

Multileaf collimator

Configuring the automatic format collimation

NOTE

The setting of the collimator leaves can be set to

- **automatic,**
i.e., the leaves are fully opened in each case after a format change (e.g. from zoom 1 to full format)

or

- **manual,**
i.e., the leaves remain in the last set collimation after a format change (e.g. from zoom 1 to full format).

At the factory, the function "Set to full intensifier field" for automatic opening on image intensifier format change is selected.

This setting can be changed at the customer's request using the XCS SSW.

- Connect the Service PC.
- Start the XCS SSW.
- Select **Configure > Site structure** and confirm with **OK**.
- Confirm all following windows with **OK** until the window **Configure:Site Structure: Site Adjustment** appears.
 - The warning message has to be confirmed with **Ja/Yes**.
- Select **Site adjustment > Control console and DR settings > Collimator**.
- Set the function "Zoom 1 < Zoom2: Set to full intensifier field" by activating the check box under **Collimator** in the **Configure: Site Structure: Site Adjustment** window.

Multileaf collimator, complete

- Set unit to -90° position.
- Switch System **off**.
- Remove the connecting cables on the multileaf collimator.
- Replace the collimator.

NOTE

Do not bend the primary collimator leaves!

- Perform a function test.
- Check the fluoroscopic field collimation as described for the FLC imaging system in document ([SPL5-330.842.02 / Checking the fluoroscopic field limitation and centering](#)); and for the ASPIA imaging system in document ([SPL5-330.842.01 / Checking the FL field limitation \(collimation\)](#)).

Replacing control unit and board D2

NOTE

Do not bend the primary leaves of the collimator!

- Set the Urooskop Access to a unit position of -90° .
- Switch the system **off**.
- Remove the cover of the X-ray tube.
- If a KermaX dose measuring chamber is present in the collimator, the plug connection of the signal cable must be separated in the vicinity of the X-ray tube.
- Draw the signal cable back to the collimator.
- Mark the position of the collimator on the flange holder with a felt pen.
- Remove the connection cable at the connection box of the collimator.
- Unscrew the collimator and set it down carefully.

NOTE

The collimator cover is attached with 9 screws. The front cover of the collimator is attached with 2 screws.

- Loosen the screws on the left and right side of the collimator (2 screws on each side).
- Remove the 5 screws on the backside of the collimator and remove the two-piece cover.
- Pull out the markers (1/Fig. 6 / p. 19) in the direction of the front cover.
- Loosen the clamping screws at the buttons (2/Fig. 6 / p. 19) and remove the buttons (3/Fig. 6 / p. 19).
- Loosen the safety nuts at the potentiometers located underneath the removed buttons and take off the retainer rings.

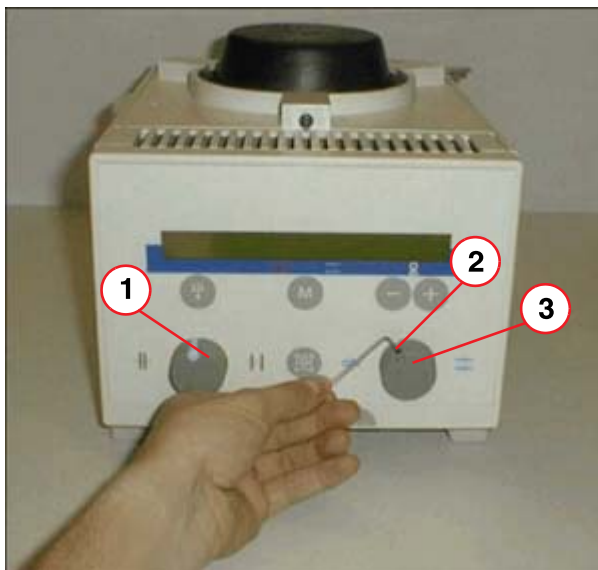


Fig. 6: Collimator

- Remove the 2 screws on the right-hand side of the collimator and open the front cover. The board D2 is now visible in the front cover (1/Fig. 7 / p. 20).

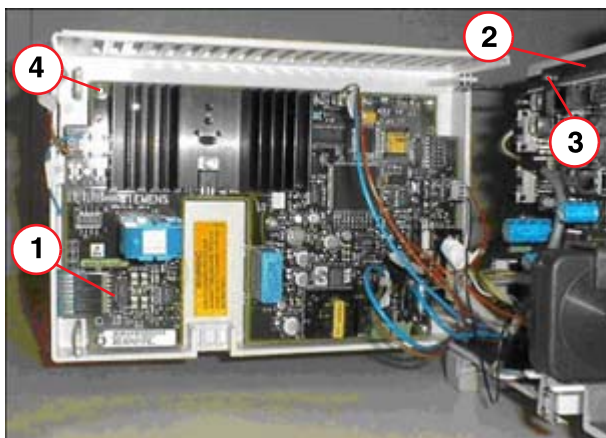


Fig. 7: Opened collimator

- Remove all plugs listed below (Tab. 1 / p. 20) from the board D2.

Assure that all plugs are properly labeled. If this is not the case, label the plugs appropriately.

Tab. 1 Overview Plugs

D2.X1	Connection to board D1
D2.X2.1 and D2.X2.2	Voltage supply for lamp from external voltage source
D2.X4.1 and D2.X4.2	Voltage supply for lamp
D2.X3	Ventilator
D2.X5	Light localizer
D2.X7	Display
D2.X8	Keyboard

- Remove the attachment of the front cover (2/Fig. 7 / p. 20) by loosening the 2 Allen screws (3/Fig. 7 / p. 20), detach the front cover and set it aside.
- Remove the 5 screws that attach board D2 to the front cover (4/Fig. 7 / p. 20).
- If required, replace the EPROM (D2.J9).
- Remove the safety nuts and retainer rings on the new board D2.
- If required, replace the display, which is attached with 4 screws.
- Install the new board D2.

NOTE

Assure during assembly that the contacts X11 (1/Fig. 8 / p. 21) on the display are exactly inserted into the plug on PC board D2.

If the assembly is correct, all contact tips will be visible on the board D2 at the plug.

- Fasten the board D2 with 5 screws and reconnect all plugs as listed in Table 1. Put the safety nuts and retainer rings back into place.
- Place the buttons onto the potentiometers and secure them with 1.5 mm clamping screws.

When the buttons are turned they may not be in contact with the front cover.

- Slide the markers into the buttons in the direction of the front cover.
- Install the attachment for the front cover (2/ Fig. 7 / p. 20) and the front cover itself.

NOTE

Note the settings of the DIP switches!

- Check the settings of the DIP switches on board D2 and adjust them if necessary. The DIP switch S1 on board D2 must be set as specified in (Tab. 2 / p. 21).



Fig. 8: Display

Tab. 2 Dip configuration

Switch / activation time of collimator lamp	S1.1	S1.2	S1.3	S1.4
10 sec	Off	Off	On	On
30 sec	On	Off	On	On
60 sec	Off	On	On	On
90 sec	On	On	On	On

- Disconnect the system from the power source before closing the collimator.
- Attach the front cover with 2 screws.
- Put the two-piece cover in place and attach it with 9 screws.

Replacing the X-ray tube assembly

- Set unit to -90° position.
- Switch the system **off**.

- Remove the tube housing.
- If a KermaX dose measuring chamber is present in the collimator, the plug connection of the signal cable must be separated in the vicinity of the X-ray tube.
- Pull the signal cable back to the collimator.
- Remove the connection cable at the connection box of the collimator.
- Unscrew the collimator and set it down carefully.

NOTE**Do not bend the primary collimator leaves.**

- Remove the cables on the tube assembly (high-voltage cable, rotating-anode cable....).
- Unscrew the Allen screws from the tube assembly holder.
- Remove the tube assembly and set it safely aside.
- Replace the tube assembly.
- Remove the prefilter (2 x 0.5 mm Al) from the radiation window of the tube assembly, if present.
- Cross out the labeling "add.filt. 1.0 Al" on the rating plate of the tube assembly with a waterproof pen.
- Reinsert the tube assembly with the holder.
- Reinsert the Allen screws of the tube assembly holder and tighten them.
- Attach the collimator, but do not connect the cables, because after start-up or conditioning of the tube assembly, the collimator has to be removed for alignment of the central ray again.

The collimator provides additional radiation protection during conditioning.

- Condition the tube assembly according document "POLYDOROS SX65/80; Adjustment and Configuration" (RX63-055.842.01) or according to the XCS SSW.
- Perform the mechanical adjustment without attaching the covers.
 - Proceed with FLC imaging system as described in document ([SPL5-330.842.02 / Setting the central ray](#)).
 - Proceed with ASPIA imaging system as described under ([SPL5-330.842.01 / Setting the central ray](#)).
- Check the fluoroscopic field collimation with FLC imaging system as described in document ([SPL5-330.842.02 / Checking the fluoroscopic field limitation and centering](#)).
- Check the fluoroscopic field limitation with ASPIA imaging system as described in document ([SPL5-330.842.01 / Checking the FL field limitation \(collimation\)](#)).

Final work

- Reinstall the covers.

Tabletop

- Set the basic unit to 0° position.
- Move the tabletop footwards as far as possible.



Fig. 9: Table

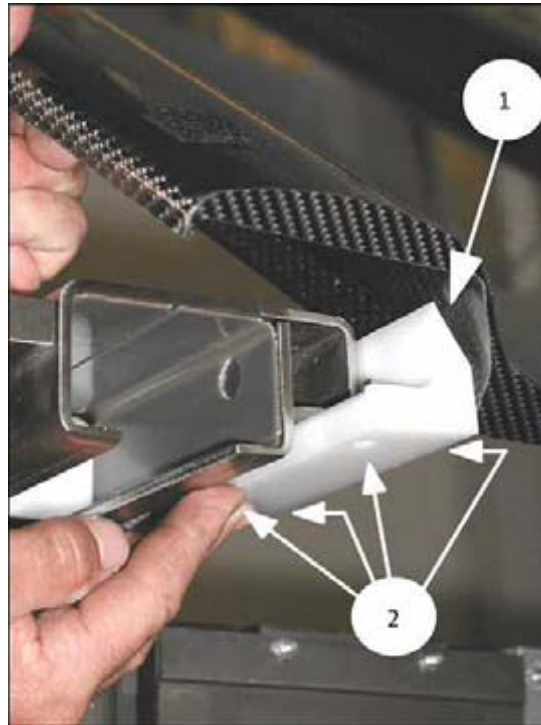


Fig. 10: Table detail

- Unlock the tabletop at the foot-end by pressing the snap locks and lift it, see [\(1/Fig. 9 / p. 23\)](#).
- Lock the tabletop, see [\(2/Fig. 9 / p. 23\)](#).
- Move the tabletop headwards as far as possible.
- Unscrew the four M4 x 15 screws, see [\(2/Fig. 10 / p. 23\)](#) to remove the front holder, see [\(3/Fig. 9 / p. 23\)](#) and [\(1/Fig. 10 / p. 23\)](#).
- When lifting the tabletop from the released holder, make sure the lock is released.
- Install the new tabletop in reverse order.

UROSKOP Access tableside control units

NOTE

The UROSKOP Access with FLC imaging system uses the table-side control unit mat. no. 77 57 664 only!

Please use tableside control unit mat. no. 74 09 308 for ASPIA imaging system only!

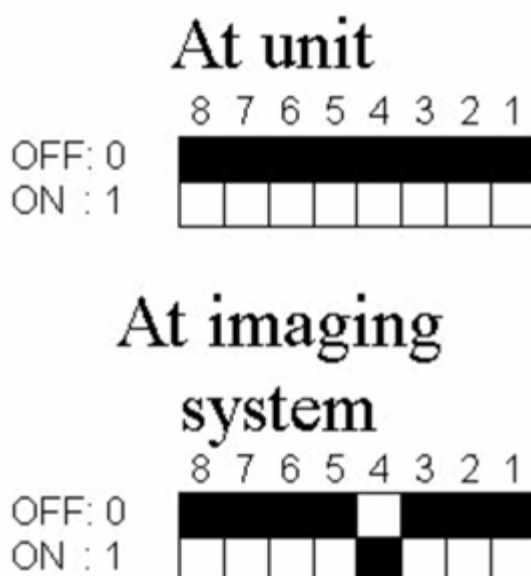


Fig. 11: Switch coding - tableside control

- The tableside control unit can be connected either to the unit or to the control console at the imaging system container.
- To do this, open the tableside control unit by removing the screws on the back side and perform the programming according to the specified switch coding, see [\(Fig. 11 / p. 24\)](#).

Attaching a tableside control unit to an available control console (option)

- Switch the system **off**.

- Open the back cover of the control panel ([Fig. 12 / p. 25](#)).



Fig. 12: Control panel

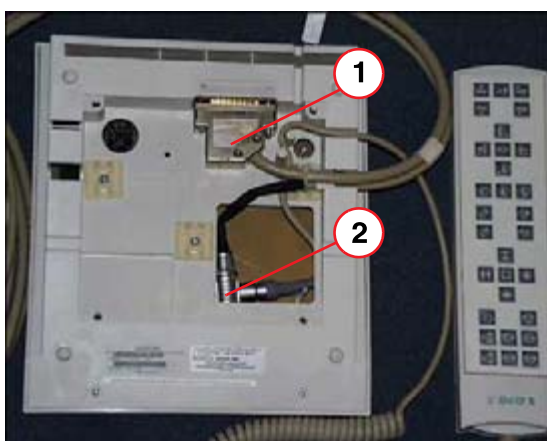


Fig. 13: Cable layout in the control panel

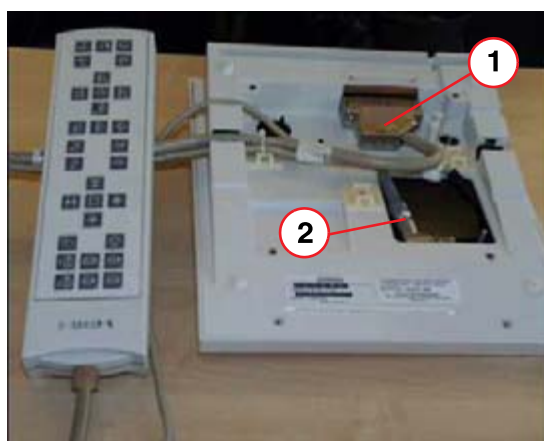


Fig. 14: Cable layout in the control panel

NOTE

The cable layout in the control panel depends on the routing of the cables ([Fig. 13 / p. 25](#)); ([Fig. 14 / p. 25](#)).

- Ensure that the cables are free of strain.
- Connect the tableside control ([2/ Fig. 13 / p. 25](#)); ([2/ Fig. 14 / p. 25](#)).
- Reattach the cover to the control panel.
- Remove cover M1 on the unit, refer to the chapter ([Covers / p. 12](#)).

- To allow the subsequent attachment of a second tableside control unit, jumpers need to be opened in the M1.D1 (Basic Unit Controller) according to Table (Tab. 3 / p. 26).

Tab. 3 Jumpers M1.D1

M1.D1.X302.	.11 to .13	.23 to .25
without tableside control	Closed	Closed
with tableside control	Open	Open

- Also refer to the wiring diagrams.
- Insulate the wires.
- Start the XCS SSW.
- Select the menu **Components > Uroskop**.
 - The UROSKOP Access SSW starts.
- In the UROSKOP Access SSW, select the menu **System > Configurations** and set the menu item **Unit remote control by Aspia desc** to “available”.
- Exit the service mode and switch the system off and on for permanent storage in the XCU.
- Check the function of the tableside control.

Monitors

NOTE

For the default setting (image position etc.) of the monitor, follow the supplied operating instructions or as described in the document "Replacement of Parts" (TD00-000.841) for the corresponding monitor type.

The adjustment of the monitors takes place in a darkened environment using the SMFit Spotmeter for TFT and CRT monitors.

Safety notes

WARNING

Damaged power cords can lead to fire or electric shock!

Failure to observe these warnings may result in death, severe personal injury or material damage.

- ⇒ Power cords must be free of all damage.
- ⇒ Only touch the plug when power cord has been removed from a power outlet.

WARNING

Objects inserted into the housing or placed on top of the housing may lead to equipment damage or personal injury.

Failure to observe these warnings may result in death, severe personal injury or material damage.

- ⇒ Never insert objects into the housing or place them on top of the housing!

WARNING

Patient handling combined with connecting of equipment can lead to electrical shock!

Failure to observe these warnings may result in death, severe personal injury or material damage.

- ⇒ Avoid all patient contact when handling the connection cable.
- ⇒ Never connect the equipment in the presence of patients!

WARNING

Certain system components (CRT monitors) are under high voltage, i.e., contact with such components can be fatal.

Failure to observe these warnings may result in death, severe personal injury or material damage.

- ⇒ Ensure that no contact to live parts connected to high voltage is possible!

Replacement notes

NOTE

The default settings for brightness/contrast and the associated luminance values on the monitor are described in the document "Quality Assurance; System; Image Quality Quick Test" (SPL5-330.820.01) for the ASPIA imaging system and "Quality Assurance; IQAP" (SPL5-330.820.02) for the FLUOROSPOT Compact imaging system.

TFT monitors

NOTE

TFT displays are replaced completely in the event of defect.

NOTE

All defective displays must be returned with a detailed description of the defect.

It is nearly impossible to find sporadic and/or temperature-related defects as well as system-related causes without a detailed description of the defect.

Monitor DSB 1803-DC (mat. no. 77 28 657)

The monitor DSB 1803-DC is used as a tabletop unit with the UROSKOP Access system in the control room.

The replacement and adjustment of this monitor is described in the document "Replacement of Parts; 18" B/W Display" (TD00-000.841.04).

Monitor SMD 1897-M (mat. no. 75 56 249)

The monitor SMD 1897-M is used as a tabletop unit with the UROSKOP Access system in the control room.

The replacement and adjustment of this monitor is described in the document "Replacement of Parts; 18" B/W Display" (TD00-000.841.04).

Monitor SCD 1897-M (mat. no. 30 80 991)

The monitor SCD 1897-M is used as a tabletop unit with the UROSKOP Access system in the control room and on the monitor support arm (mat. no. 57 56 106/57 56 114).

The replacement and adjustment of this monitor is described in the document "Replacement of Parts; Display; 18" Color Display" (TD00-000.841.02).

Monitor Eizo R11 (mat. no. 30 99 553)

The monitor Eizo R11 is used as a tabletop unit with the UROSKOP Access system in the control room.

The replacement and adjustment of this monitor is described in the document "Replacement of Parts; Display; 18" Color TFT Display" (TD00-000.841.15).

NOTE

The monitor Eizo R11 is replacement for monitor type FSC 4312.
In case of replacement of monitor type FSC 4312, order both monitor Eizo R11 (mat. no. 30 99 553) and DVI adapter (mat. no. 77 48 531).

Monitor FSC 4312 (mat. no. 30 84 852)

The monitor FSC 4312 is used as a tabletop unit with the UROSKOP Access in the control room.

The replacement and adjustment of this monitor is described in the document "Replacement of Parts; Display; 17" Color Display (FSC 4312)" (TD00-000.841.03).

Monitor DSC 1703 DC-V (mat. no. 30 99 959)

The monitor DSC 1703 DC-V is used as live and reference monitor at the TFT support arm (mat. no. 77 57 565) with the UROSKOP Access.

The replacement and adjustment of this monitor is described in the document "Replacement of Parts; Display; 17" Color TFT monitor (DSC 1703-DC-V)" (TD00-000.841.13).

Troubleshooting

Tab. 4

Defect	Possible cause	Solution
Monitor is not showing an image. Power LED is off	Defective fuse. Power cord is not plugged in or the power is off.	1. Check the fuse (with activated voltage) 2. Replace display
Monitor is not showing an image. Power LED is on.	No video/sync signal (cable or video source) Inputs were not connected properly during reinstallation	1. Check the video/sync signal 2. Replace display
Fuzzy image, interference in vertical lines	Frequency and/or phase is not set up correctly Interference with the video signal	1. Check the frequency/phase settings 2. Check the video signal for interference 3. Replace display

Defect	Possible cause	Solution
Other disruptions	Plugged connection(s) is (are) loose.	1. Check all connections for tightness. 2. Replace display
The required contrast is not reached	BA signal is too low	1. The BA signal must have a level of 0.5 V, since the full modulation cannot be guaranteed otherwise. 2. Adjust the brightness/contrast settings. 3. Replace display.

Synchronization problems

If you experience synchronization problems, make sure the modulation signal is OK. The sync signal must be between 200 mV and 400 mV with sync on green (BAS input) at 75 Ohm or TTL/HCMOS level with H/V modulation. If this signal level is not reached, the display cannot be synchronized.

Maximum contrast cannot be reached after replacement of display

If it is impossible to reach the max. contrast, check the switch configuration at the BNC sockets. For B/W displays, the BNC connector for green must be used and the switch "RGB <==> Mono" has to be set to "Mono".

If the switch is not set right, the system will only activate the green input and not all three pixels (i.e., only green subpixels). This prevents the system from reaching the maximum contrast.

Drives

Tab. 5 Overview of motors

Description	Subas- sembly	Function
M80	M3	System, longitudinal
M100	M3	Tabletop, transverse
M120	M9	Park tube assembly
M140	M2	Lift system
M150	M2	Tilt system
M160	M5	Tabletop, longitudinal

NOTE

The replacement of the drives M80/M100/M120/M140/M150/M160 is not described in this document.

Professional support from USC/CS HSC 24 is mandatory when replacing these components.

Camera Videomed DHC

NOTE

The replacement of the CCD camera is not described in this document.

Professional support from USC/CS HSC 24 is mandatory when replacing this component.

Basic unit controller (BUC)

General information

- The BUC assembly comprises the following parts:
 - A support plate with mounted PC boards.
 - A motherboard (D1) with all connectors to the unit.
 - A processor board (D300- MCB 300).
 - Several FHP motor power units (D100/ D110/ D130).
 - A level converter board (D4 converter board/ D19-IO board).
 - Connecting cable between D1 and D4.
- Since troubleshooting on the individual PC boards is nearly impossible with the exception of the FHP motor power units, the assembly can only be replaced as a whole.
- Since all connectors on the BUC need to be removed, check the labeling and relabel, if necessary.
- Set unit position to 0°.
- Switch the system **off**.
- Actuate the **EMERGENCY STOP** button.
- Remove the covers M1, see subchapters ([Covers / p. 12](#)).

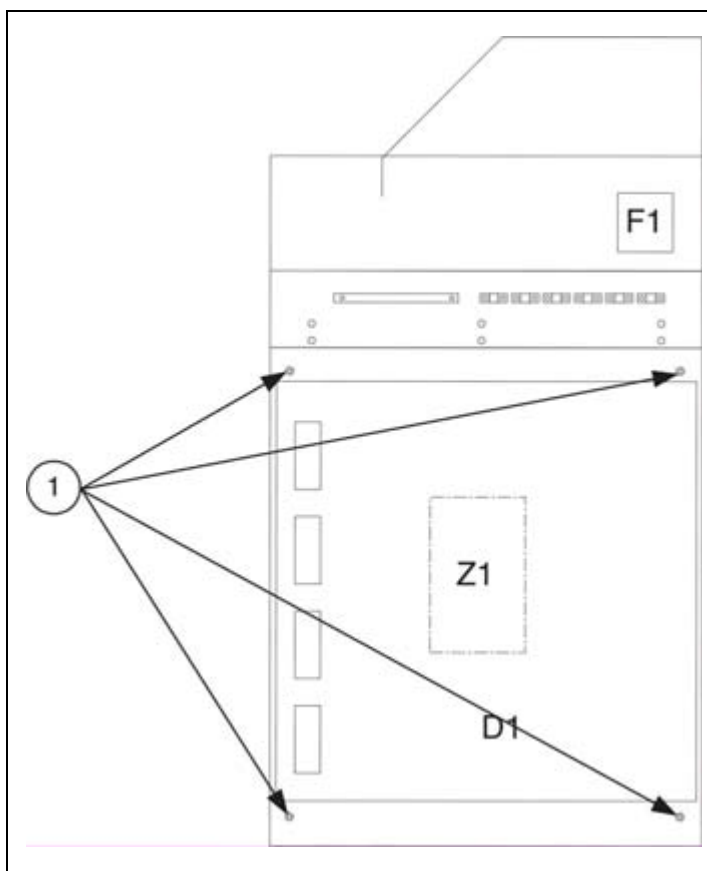


Fig. 15: BUC (1)

- Remove the 8 Allen screws of the cover plate above the BUC assembly.

- Remove all connectors on the BUC.
- Undo the 4 Allen screws (1/ Fig. 15 / p. 33) on the support plate.
- Swing the BUC toward the front and take it out. Pay attention to the cables.
- Use the programming jumpers, the DIP switches and the shorting jumpers of the old assembly, also refer to the wiring diagram for UROSKOP Access.
- Install the BUC analogously.
- Reconnect all connectors.
- If the cable clamps were removed, reinstall them. In doing so, make sure that there is good contact between the shielding and the cable clamp and the plate.
- Unlock the **EMERGENCY STOP** button.

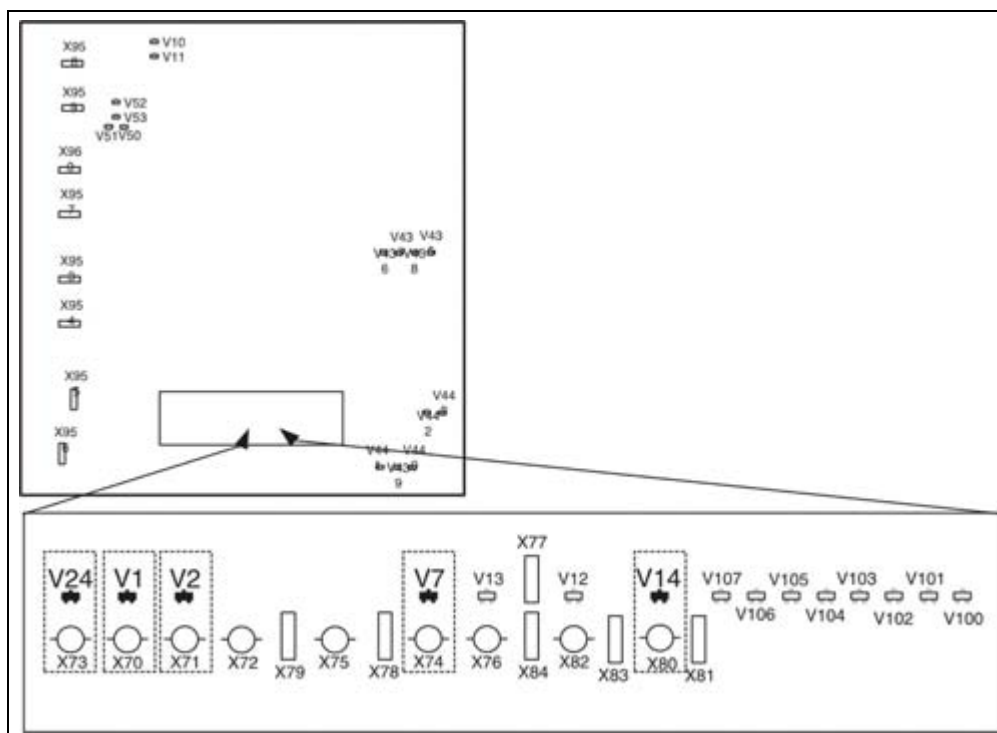


Fig. 16: BUC (2)

- Switch the system **on**.
- On PC board D1, at least the LEDs (V 24; V1; V2; V7; V14) that appear dark in the figure must light up, see (Fig. 16 / p. 34). Otherwise, check the voltage supply according to the circuit diagram.

NOTE

The following download of the firmware for the BUC only applies to ASPIA imaging system. The firmware will not be downloaded anymore at the FLUOROSPOT Compact imaging system.

- Load the “BUC application software” with the XCS SSW, also refer to the “UROSKOP Access Online Help” (menu **Service Notes > Software download**).
 - Connect the PC to the XCU with the service cable.
 - Start the XCS SSW.
 - Insert the disk labeled “BUC application software” into the PC floppy drive.
 - Select the menu **Data > Download** in the XCS SSW (the download menu compares the SW version on the BUC with the SW version on the floppy disk).
 - Mark the entire line by clicking the BUC SW version and perform the download with **Start**.
 - Once the download is complete, exit the menu with **Cancel** and log off with **System > Logoff**.
- Switch the generator **off** and **on** again.
- Perform a function test. Activate all drives of the basic unit and perform the movements across the entire movement range.
- Reinstall the covers.

Power supply units G1 and G2

- Switch the system **off**.
- Remove the covers M1, see ([Covers / p. 12](#)).
- Check the line voltage setting of the new power supply unit and, if necessary, set the switch at the front to the existing line voltage.
- Replace the power supply unit.
- The following voltage range is permissible at the + and - terminals of the power supply units:
 - **24.1 to 24.9 V/ DC**
- The output voltage cannot be set on the power supply units.
- Perform a function test.
- Reinstall the covers.

CAN boards D20, D21, D22, D100 (PL SX 65/80)

- Switch the system **off**.
- When replacing boards D20,D21,D22 and D100 (PL SX 65/80), ensure that the connectors are securely fastened.
- When replacing board D22, plug in the jumpers according to the following table.

Tab. 6 CAN boards

M2.D22	X1	X2
without cassette	plugged	plugged
with cassette	Open	Open

- Also refer to the wiring diagram for UROSKOP Access.
- When replacing board D100 (PL 65/80 SX), be sure to check the jumpers.
 - Also refer to the wiring diagram for UROSKOP Access.

XCU in XCS, Polydoros SX 65/80

Replacement of the existing "BACK UP SW" floppy disk

NOTE

If, corresponding to the instructions on the latest CD "XCS Service SW Tools" (RXD0-000.801.02), the configuration of the system was previously saved onto a floppy disk and filed in the system folder, then reading out the configuration with the aid of the service PC is not necessary.

- Replace the XCU, referring to the latest replacement instructions for the "POLYDOR-OS SX 65/80; Replacement of Parts" (RX63-055.841.01).

Replacement without "BACK UP SW" floppy disk

NOTE

If the configuration of the system has to be reconfigured after loading the software (XCU, SCU...), it is necessary to first note the configuration of the system with the service PC.

Proceed as described in the section ([Configuration of the system / p. 39](#)).

When programming the XCU, the ionization chamber "Kerma X" must always be programmed as present, regardless of whether this option has been installed or not.

Backup

- Perform a backup before replacing the XCU or the software.
- Take the backup floppy disk out from the system folder.
- Insert the backup floppy disk in the service PC, drive A:.

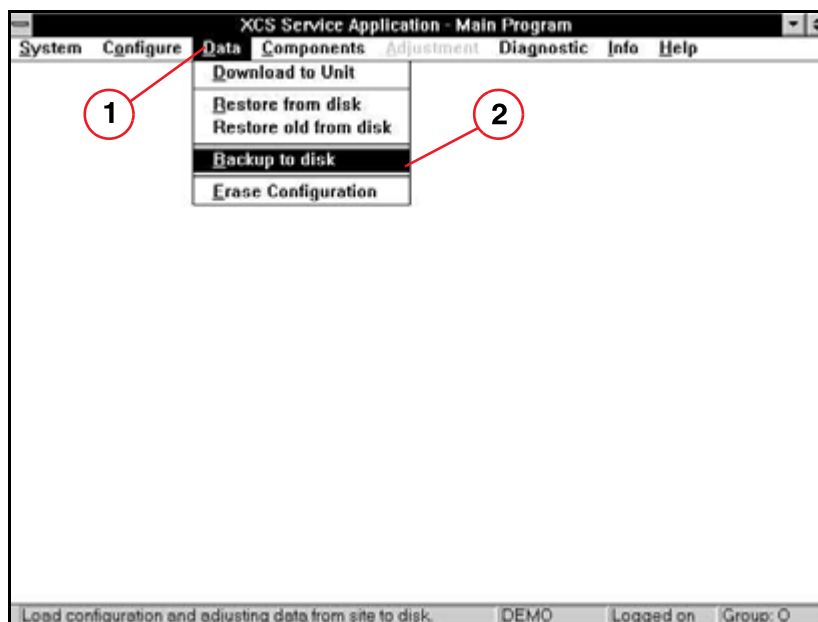


Fig. 17:

- Select the menu **Backup to disk** (Fig. 17 / p. 39).
- Confirm with **OK**.
The backup is performed automatically.
- After the backup is finished, confirm with **OK**.
- Remove the floppy disk from drive A: and file it in the system folder.

Configuration of the system

- Select the menu **Components > Urooskop** in the XCS SSW.
- ### 1. Configuration (XCU)
- Select **System > Configurations** and note the displayed data (Fig. 18 / p. 40).

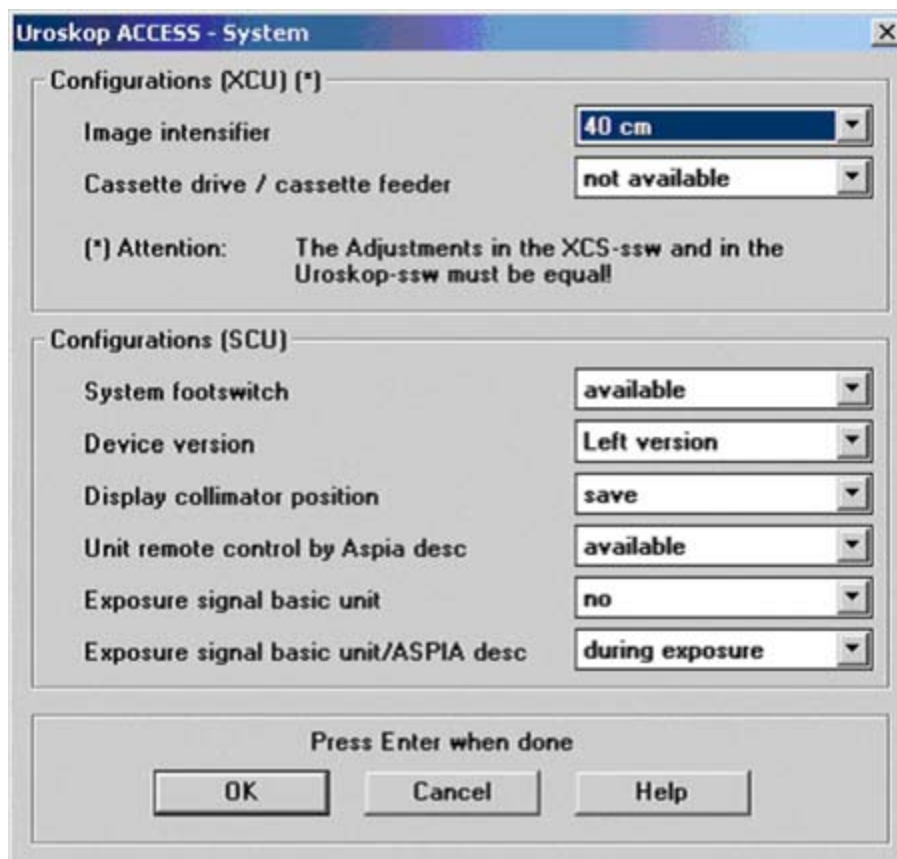


Fig. 18:

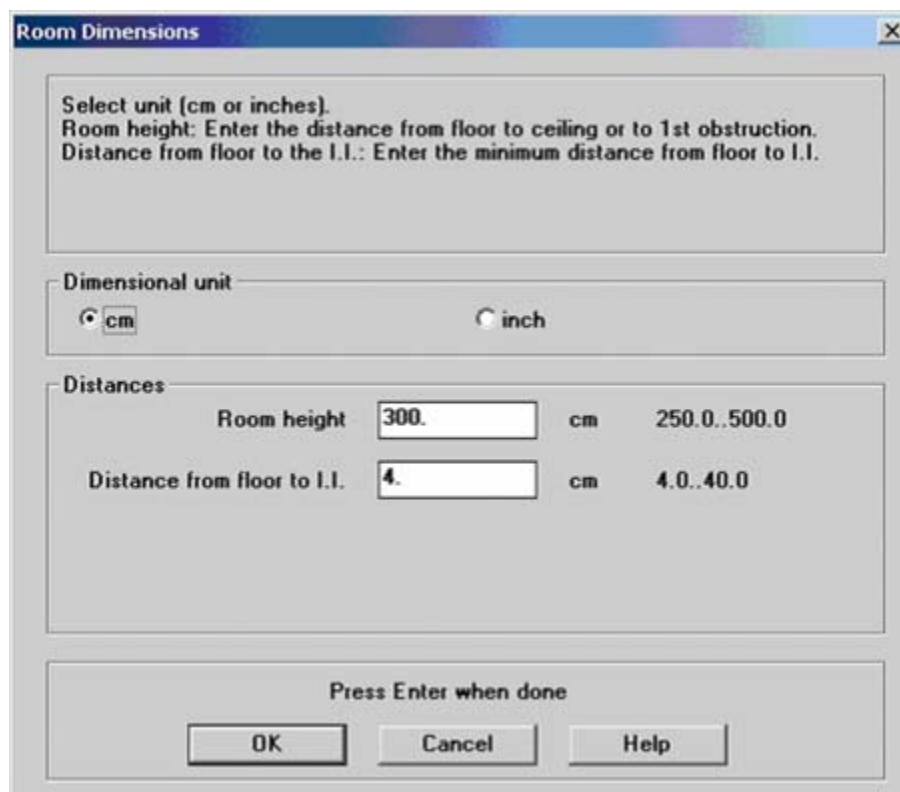
- Select **Cancel**.

NOTE

The "Display collimator position" function is programmed to "save" in order to save the setting of the leaves in the collimator on saving the unit position on the hand-held control (3 possible positions M1, M2, M3). When one of the memory keys is selected, the unit position and the leaves of the collimator are then set to the previously saved position. Refer also to the Operator Manual.

2. Room Dimensions

- Select **Adjustment > Room Dimensions** and note the displayed data ([Fig. 19 / p. 41](#)).



The image shows a Windows-style dialog box titled "Room Dimensions". It contains instructions at the top: "Select unit (cm or inches). Room height: Enter the distance from floor to ceiling or to 1st obstruction. Distance from floor to the I.I.: Enter the minimum distance from floor to I.I." Below this is a section for "Dimensional unit" with two radio buttons: "cm" (which is selected) and "inch". Underneath is a section labeled "Distances" containing two rows of input fields. The first row is for "Room height" with a text box containing "300.", followed by "cm" and a range "250.0..500.0". The second row is for "Distance from floor to I.I." with a text box containing "4.", followed by "cm" and a range "4.0..40.0". At the bottom, there is a prompt "Press Enter when done" and three buttons: "OK", "Cancel", and "Help".

Fig. 19:

- Select **Cancel**.

3. Switch on time of the light localizer lamp

- Select "Adjustment".
- Select "Defaults".
- Select **Adjustment > Defaults > Collimator: Switch on time of the light localizer lamp** and note the displayed data ([Fig. 20 / p. 42](#)).



Fig. 20:

- Select **Cancel**.

4. Speed of plates

- Select **Adjustment > Calibrations**.
 - The window **Execute Calibration Function** appears.

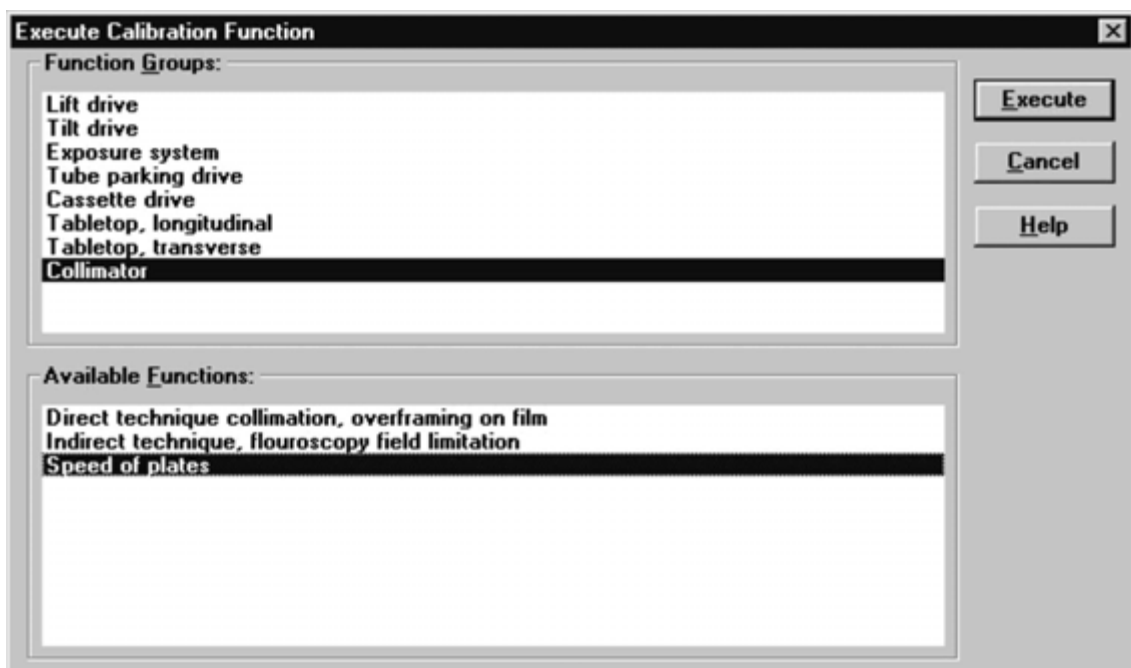


Fig. 21:

- Select **Collimator**.
- Select **Speed of plates** (Fig. 21 / p. 42).
- Select **Execute** and note the displayed data (Fig. 22 / p. 43).

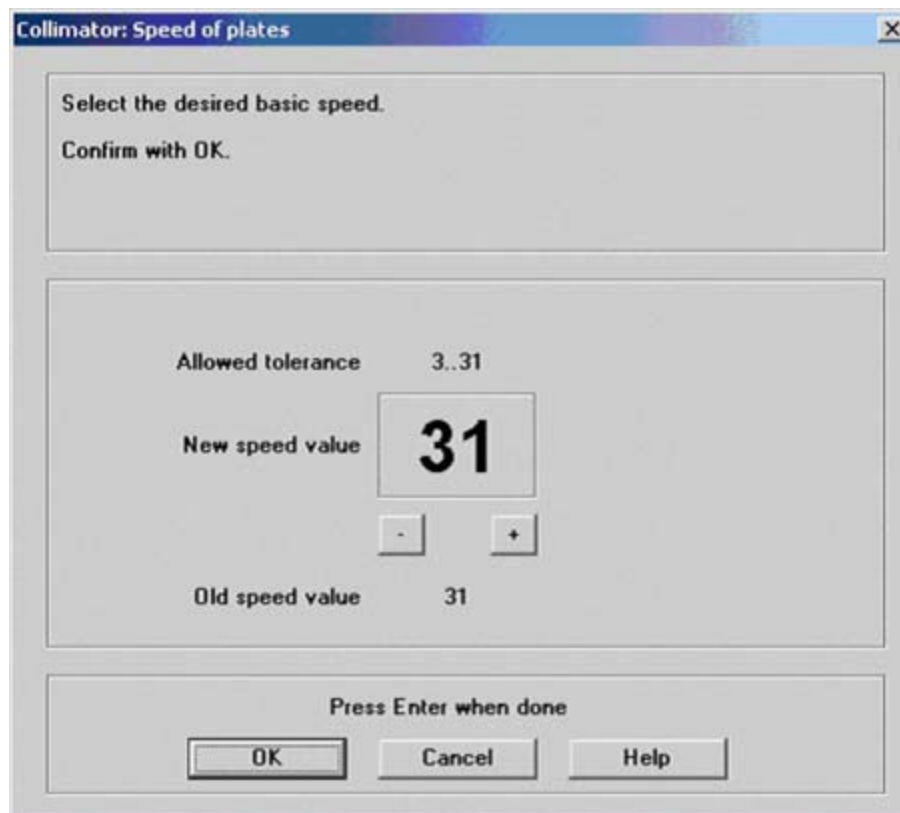


Fig. 22:

- Select **Cancel**.

5. Tube parking drive speed

- Select **Adjustment > Calibrations**.
 - The window **Execute Calibration Function** appears.

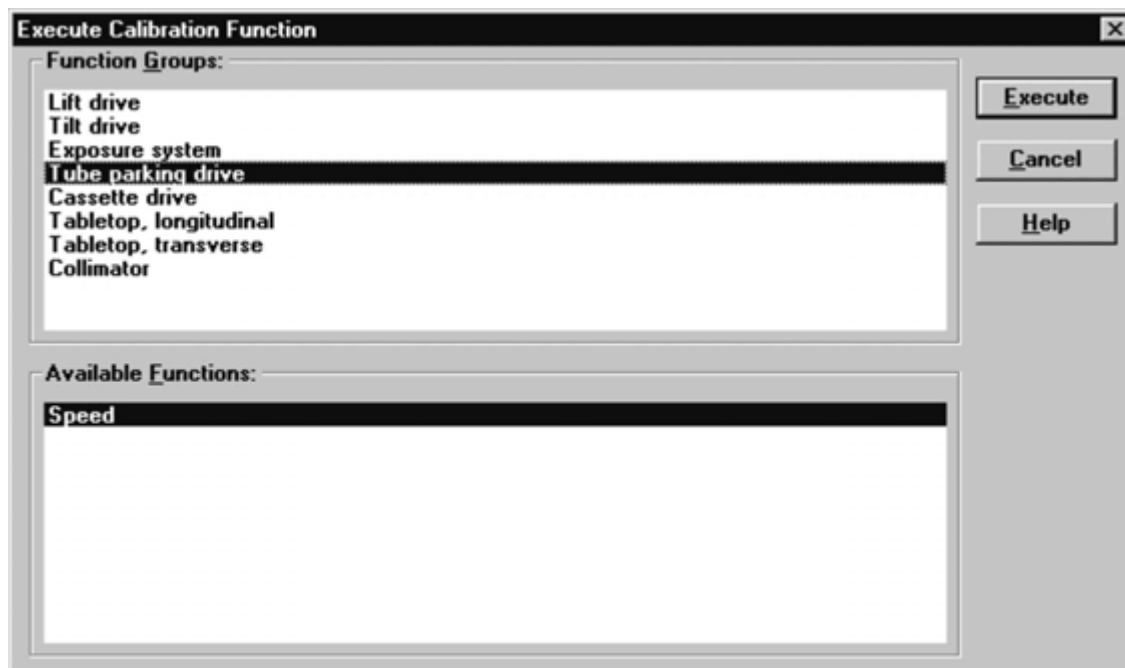


Fig. 23:

- Select **Tube parking drive**.
- Select **Speed** (Fig. 23 / p. 44).
- Select **Execute** and note the displayed data (Fig. 24 / p. 45).

Should the value be more than 75%, then not more than 75% may be set when entering the value again. The factory setting is 55%.

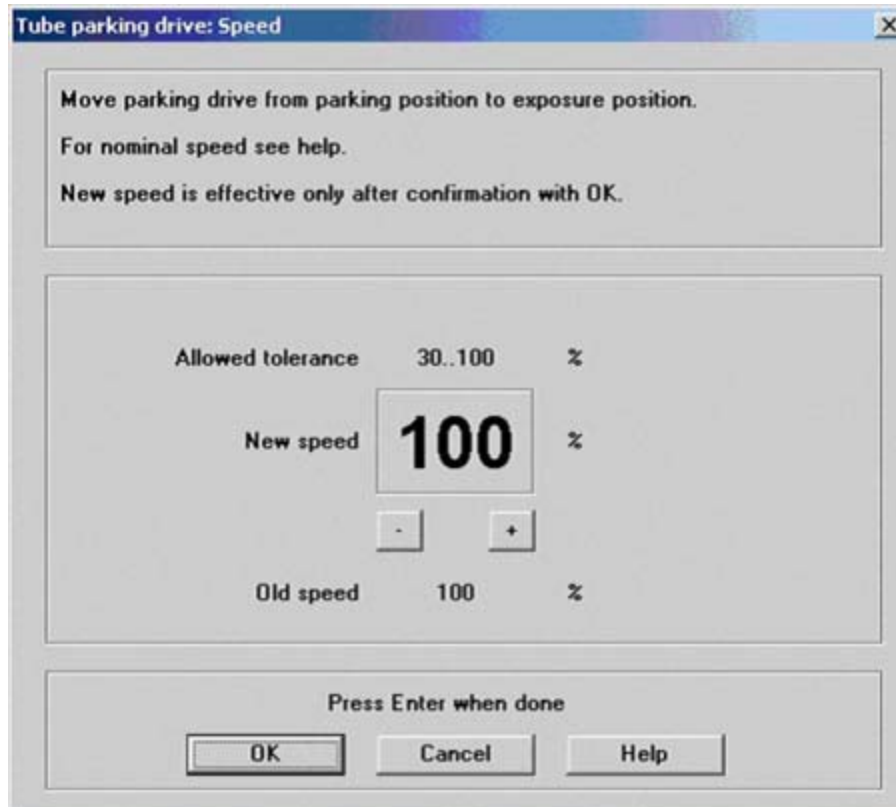


Fig. 24:

- Select **Cancel**.

Downloading the SSW

NOTE

The XCS SSW, UROSKOP Access SSW and UROSKOP Access On-line Help for UROSKOP Access with FLUOROSPOT Compact imaging system are content of the CD "UROSKOP System SW CD".

The XCS SSW for UROSKOP Access with ASPIA imaging system is delivered on CD, the UROSKOP Access SSW and UROSKOP Access Online Help on floppy disk.

NOTE

Only released XCS SSW versions according to document "compatibility list software" may be used.

There are different versions of the XCS SSW for the imaging systems FLUOROSPOT Compact and ASPIA and must be used only on the imaging system they are released for.

- Install the XCS SSW on the service PC.
- If necessary, install the supplied UROSKOP Access SSW on the service PC.
- If necessary, install the UROSKOP Access Online Help on the service PC.

Downloading the XCU SW

NOTE

On the UROSKOP Access systems with ASPIA imaging system, the XCU SW is delivered as floppy disk with the system.

On the UROSKOP Access systems with FLUOROSPOT Compact imaging system the XCU SW has to be downloaded from the CD "UROSKOP System SW CD" to a floppy disk (see SW Installation shell for Urooskop Access - (Fig. 25 / p. 46).

The same applies to the SCU SW.

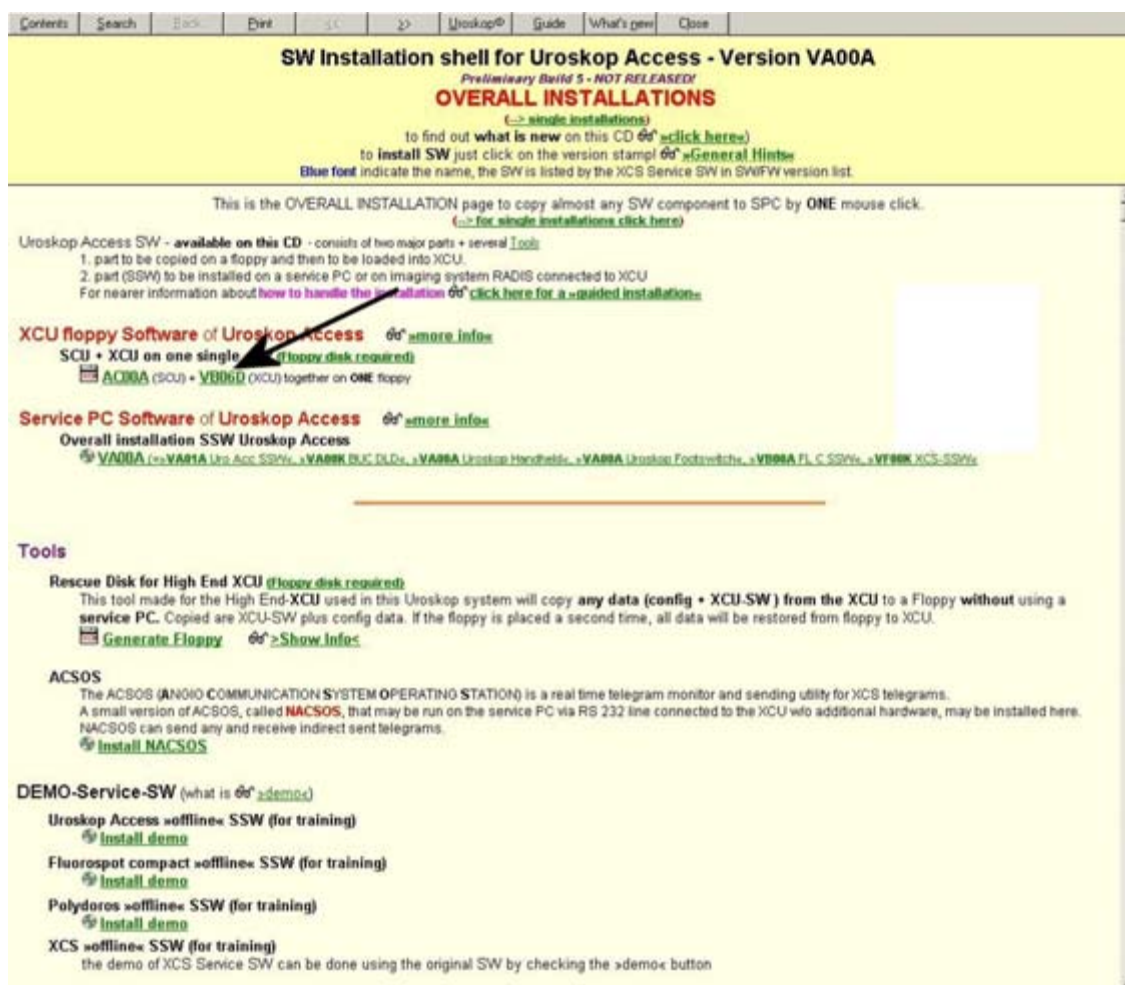


Fig. 25:

- Insert the download floppy disk of the XCU in the generator on CPU HD UNIT in the floppy disk drive.
- Switch the generator **off for max. 10 sec** using switch S2.
- Switch the generator **on** with switch S2 and button S1.
 - ⇒ The download is performed automatically (approx. 2 minutes). A tone sequence sounds after completion of the SW installation.
- Switch the generator **off** using switch S2.
- Remove the download floppy disk from the XCS floppy disk drive.

Downloading the SCU SW

- Insert the download floppy disk of the XCU in the generator on CPU HD UNIT in the floppy disk drive.
- Switch the generator **on** with switch S2 and button S1.
 - ⇒ The download is performed automatically. A tone sequence sounds after completion of the SW installation.
- Switch the generator **off** using switch S2.
- Remove the download floppy disk from the XCS floppy disk drive.

Downloading the values for "Heating" (D220)

NOTE

The heating software is content of the XCU floppy disk.

NOTE

If a PC without power supply unit is operated only by a battery, it must be ensured that the battery is fully charged (refer to PC operating instructions).

- Switch the generator **on**.
Switch on with switch S2 and button S1 in the generator.
- Insert the download floppy disk of the XCU in the service PC in the floppy disk drive.
- Select **Data > Download to Unit** in the XCS SSW (Fig. 26 / p. 47).

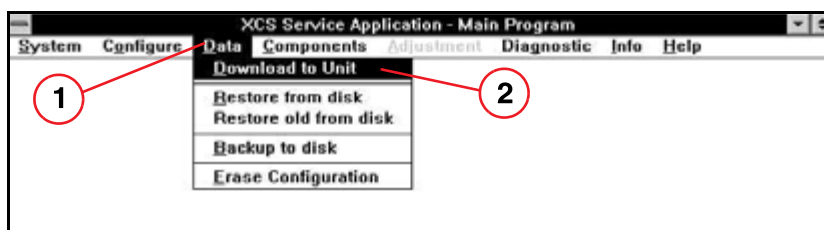


Fig. 26:

Download

- Select the radio button **from the floppy of SPC** (3/ Fig. 27 / p. 47).

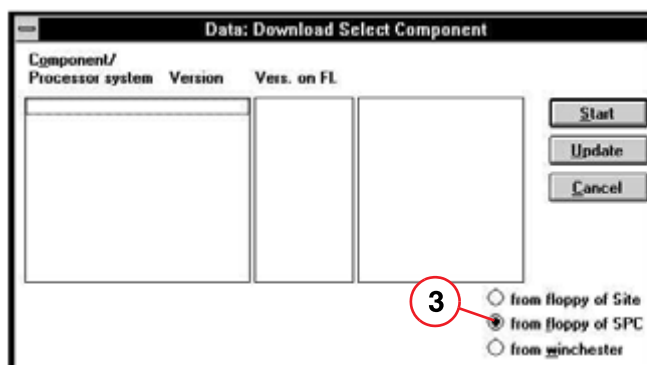


Fig. 27:

NOTE

Start the download only if a version older than VB01G is present on the component/processor system side. The download is performed automatically when selected.

If an error occurs in the download of the heating software, then it is possible that the laptop has a too high clock frequency. In this case use a laptop with a lower clock frequency (e.g., Pentium 2).

Displays on D100 in generator

- XCU download = 1 (only at the first download, otherwise "b")
- Heating download = F



Fig. 28:

- After automatic installation (Fig. 28 / p. 48) confirm with **OK**.
- Select **System > Logoff** in the XCS SSW main menu and confirm the following window with **Put to Unit**.
- Switch system **off** and wait until the system has powered down completely.
- Switch system **on** and wait until the system has powered up completely.

Lenze frequency converters

- The Lenze frequency converters are supplied factory-preprogrammed.
- Check the part no. of the frequency converter supplied against the part no. of the converter to be replaced.
- Switch the system **off**.
- Remove the covers M1, see subchapter ([Covers / p. 12](#)).
- When replacing the converter, pay attention to the designation of the wires. If necessary, mark the wires.
- Replace the frequency converter.
- Switch the system **on**.
- The corresponding potentiometer is set via the UROSKOP Access SSW.

Drive	Frequency converter	Potentiometer
System longitudinal	U80	R80
Cassette	U90	R90
System vertical	U140	R140
System tilt	U150	R150
Table longitudinal	U160	R160

- Connect the service PC to the XCU.
- Start the UROSKOP Access SSW via the XCU SSW.
- Select the corresponding drive under **Adjustment > Calibrations**.
- Adjust the potentiometer by means of the zero method, see “UROSKOP Access Online Help”.
- At the end of the adjustment, exit the service mode and switch the system off and on for permanent storage in the XCU.
- Perform a function test.
- Reinstall the covers.

ASPIA imaging system PC

NOTE

If the ASPIA PC is replaced, the new PC must be installed with the imaging system software available on site.

Before installing the imaging system software, please look for the latest entries in the CS Knowledge Database.

In particular, a backup as specified in the document "Startup; System; UROSKOP Access Imaging System" (SPL5-330.815) must have been performed before the PC is replaced.

The system binder contains a backup of the UROSKOP Access imaging system either on a floppy disk or on a CD.

This locally available backup should only be used in the event of PC failure (when making a current backup is no longer possible).

Write down the following data before beginning the installation:

- Service key,
- IP address,
- Computer name,
- Subnet mask,
- Gateway.

The document "Startup; System; UROSKOP Access Imaging System" (SPL5-330.815) is absolutely required for the installation of the software and can be found in the system binder.

If the PC type Celsius 420/444 is replaced with a PC Celsius M410 in the system, observe the instructions in the document "Replacement of Parts; PC Celsius 420/444 by Celsius M410" (SPL5-330.841.03).

NOTE

Apart from the imaging system PC itself, the only component which can be exchanged on the PC is the BIOS battery (only for PC types Celsius 444/Celsius M410).

- Switch the system off.
- Remove the rear and left-hand cover of the container ([Fig. 29 / p. 51](#)).
- Remove the holding clamp ([1/ Fig. 29 / p. 51](#)).



Fig. 29: Aspia container

- Remove all connectors and cables of the PC.
Note the designations. If necessary, mark the cables.
- Replace the PC and connect all connectors and cables.
Ensure good contact of the shielding.
- Once the PC in the imaging system container has been replaced, install the imaging software as described in the document "Startup; System; UROSKOP Access Imaging System" (SPL5-330.815).
- As a final step, complete the Image Quality Quick Test (SPL5-330.820.01).

Replacement of BIOS battery

NOTE

The following subchapter only applies to the PC types Celsius 444 and Celsius M410.

NOTE

Prior to this exchange, acquire a suitable battery type CR2032, 3 V (mat. no. 30 82 146). Furthermore you need gloves made of cotton for handling the battery.



NOTICE

Short circuit or corrosion of battery!

Touching the battery without gloves can lead to short circuit and corrosion.

- ⇒ Handle the battery with care, do not touch the battery without gloves and remove the battery from the socket with a piece of plastic.

PC Celsius 444

- Switch the PC on and wait until the PC has started up completely.
- Open the CD tray, insert the BIOS CD (mat. no. 77 13 111) and close the tray.

NOTE

Observe that the BIOS CD (mat. no. 77 13 111) must be used.

- Switch the PC off.
- Disconnect all cables from the PC.
- Remove the left side cover of the PC after removing the 2 screws on the backside of the PC (1/Fig. 30 / p. 52).

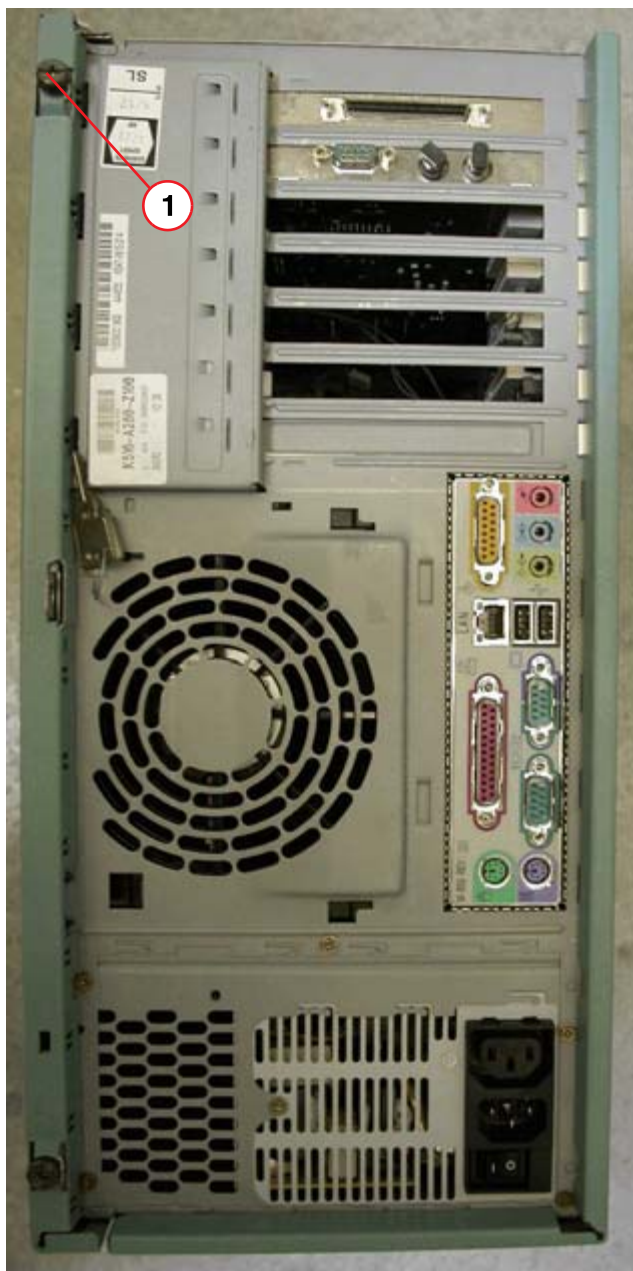


Fig. 30: PC Celsius 444



- Remove the BIOS battery using a piece of plastic (1/Fig. 31 / p. 53).

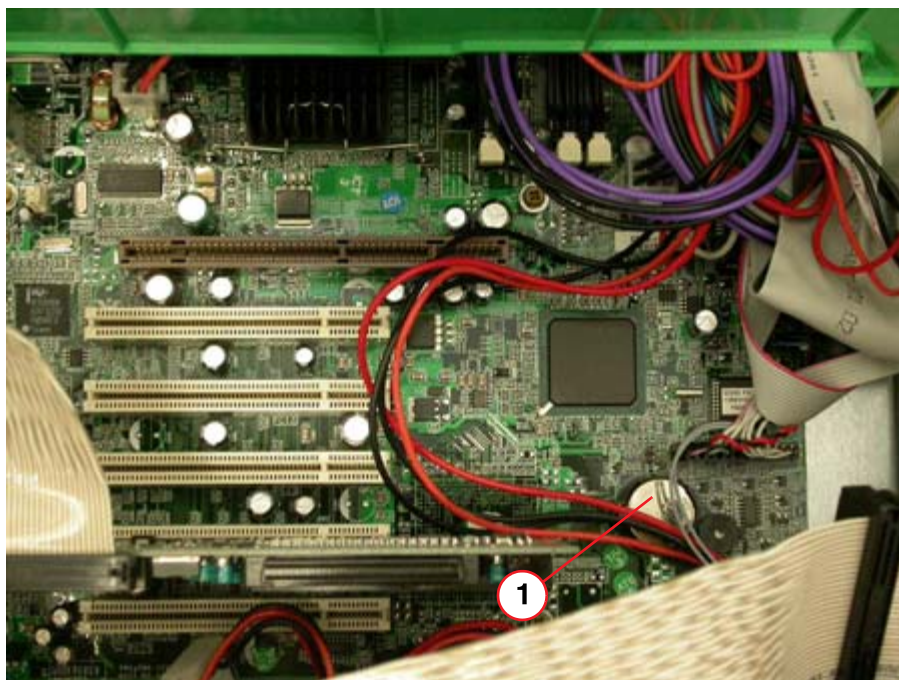


Fig. 31: PC Celsius 444

- Insert the new BIOS battery.
- Reattach the left side cover of the PC.
- Connect all cables of the PC.
- Switch the PC on and wait until following message appears:
 - Please Remove Done BIOS CD!
 - Please Turn Off Power Or Reset System!
- Remove the BIOS CD from the tray.
- Reboot the PC.
 - The BIOS data has been restored now.

PC Celsius M410

- Switch the PC on and wait until the PC has started up completely.
- Open the CD tray, insert the BIOS CD (mat. no. **83 80 441**) and close the tray.

NOTE

Note that only the BIOS CD (mat. no. 83 80 441) must be used.

- Switch the PC off.
- Disconnect all cables from the PC.

- Remove the left side cover of the PC after unlocking the cover on the green button (1/ Fig. 32 / p. 54).



Fig. 32: PC Celsius M410



- Remove the BIOS battery using a piece of plastic (1/Fig. 33 / p. 55).

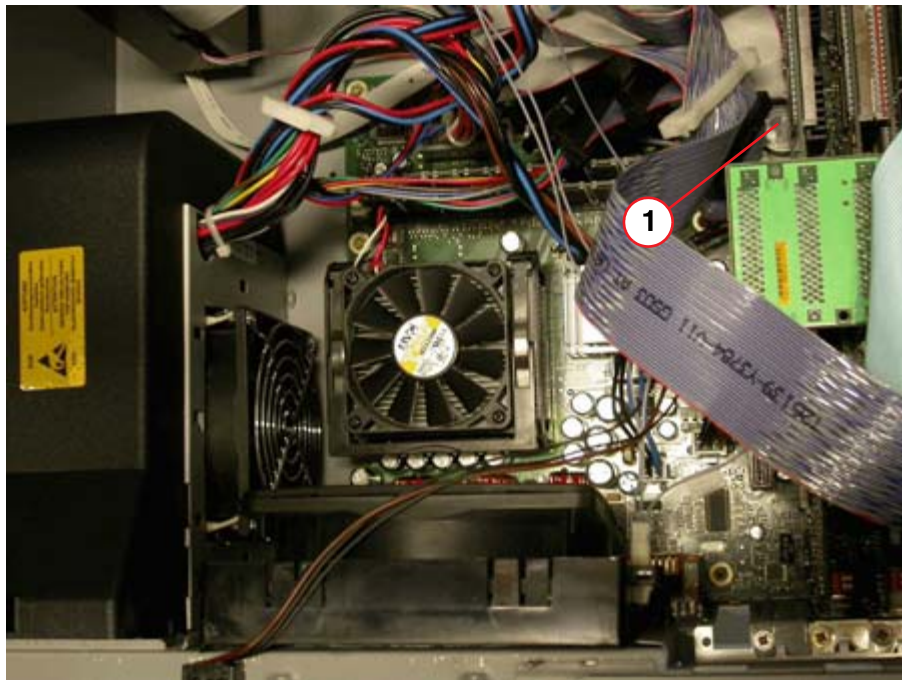


Fig. 33: PC Celsius M410

- Insert the new BIOS battery.
- Reattach the left side cover of the PC.
- Connect all cables of the PC.
- Switch the PC on and wait until following message appears:
 - Please Remove Done BIOS CD!
 - Please Turn Off Power Or Reset System!
- Remove the BIOS CD from the tray.
- Reboot the PC.
 - The BIOS data has been restored now.

FLUOROSPOT Compact imaging system PC**NOTE**

Beginning 05/2005, the UROSKOP Access is delivered with the FLUOROSPOT Compact imaging system using the PC Econel 30.

The replacement of the PC itself or defined components is described in the “Help-File FLC” (SPL5-330.880) and can be found as a CD on the system or by pressing the Help button in the FLC service main menu.

- Following components are exchanged at the FLC PC:
 - XCS board
 - CD burner
 - CCI board
 - DVP3 board.

Board D1 in the imaging system container

- After the replacement of board D1, check the switching off and on again of the imaging system container and generator.

VGA/video converter in the imaging system container

- When replacing the VGA/video converter, the latest document “Installation and Start-up; Urodynamics Interface / Scan Converter” (SPL5-330.814.01) must be used.

Replacement of top cover of imaging container

NOTE

In case replacement of the top cover of the imaging container (FLUOROSPOT Compact/ASPIA) is necessary (e. g. due to mechanical damage), the top cover with mat. no. 83 93 014 should be used. This top cover has an additional integrated fan.

NOTE

All FLUOROSPOT imaging system containers are equipped with the top cover mat. no. 83 93 014.

- Remove the cover screws on the old top cover.
- Remove the top cover.
- Connect the wires (K2.L1/K2.N/K2.PE) of the cable (1/Fig. 35 / p. 60) of the new top cover (mat. no. 83 93 014) to the power supply rails K2 (Fig. 34 / p. 59) in the imaging system container.



Fig. 34:

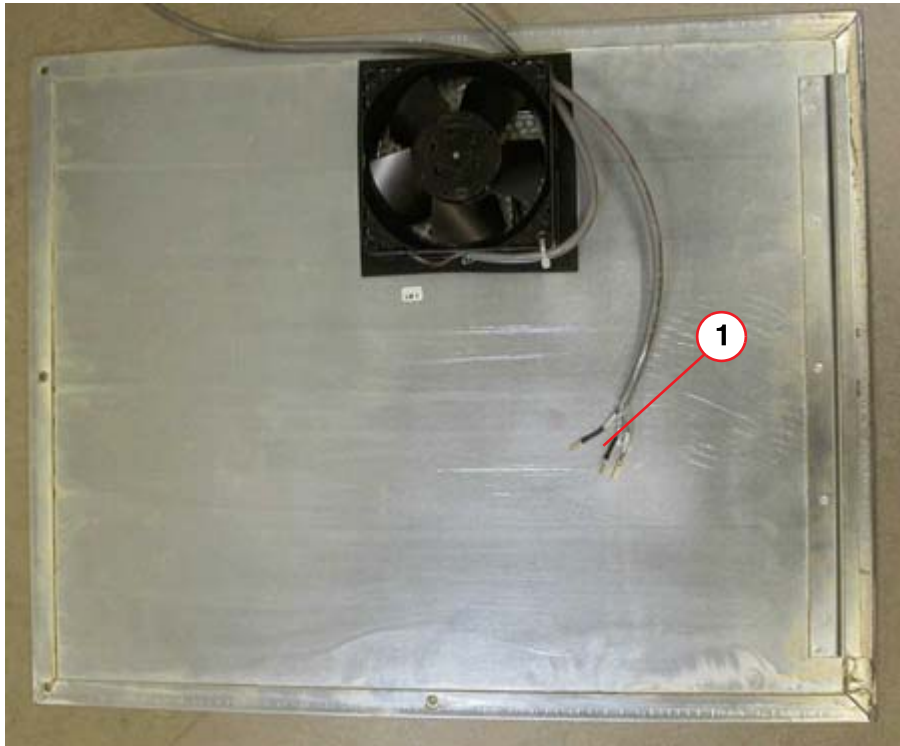


Fig. 35:

- Create a strain relief as shown (1/ Fig. 36 / p. 60).



Fig. 36:

- Reattach the top cover and screw in the cover screws.
- Switch the system on and check the function of the fan (audibly).

Replacement of fan on top cover of imaging container

NOTE

This subchapter only applies to the top cover mat. no. 83 93 014.

- Remove the cover screws on the old top cover.
- Remove the top cover.
- Remove the wires (K2.L1/K2.N/K2.PE) of the cable (1/Fig. 35 / p. 60) of the fan from the power supply rails K2 (Fig. 34 / p. 59) in the imaging system container.
- Remove the locknuts, serrated lock washers, washers and finally the fan itself (Fig. 37 / p. 61).

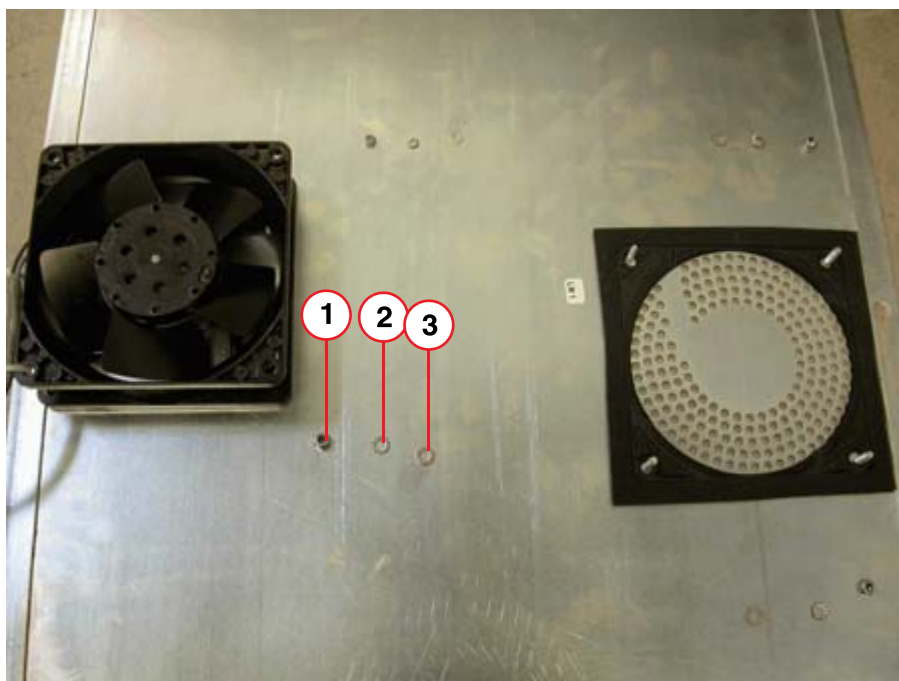


Fig. 37:

- Pos. 1 Locknut
Pos. 2 Serrated lock washer
Pos. 3 Washer

- Mount the new fan in the reverse order described above.

NOTE

Note that the cable outlet of the fan faces in the direction as shown in (Fig. 35 / p. 60).

NOTE

Note that the arrow (1/Fig. 38 / p. 62) displays in the direction outside the container, because this arrow shows the direction of the air stream through the fan.

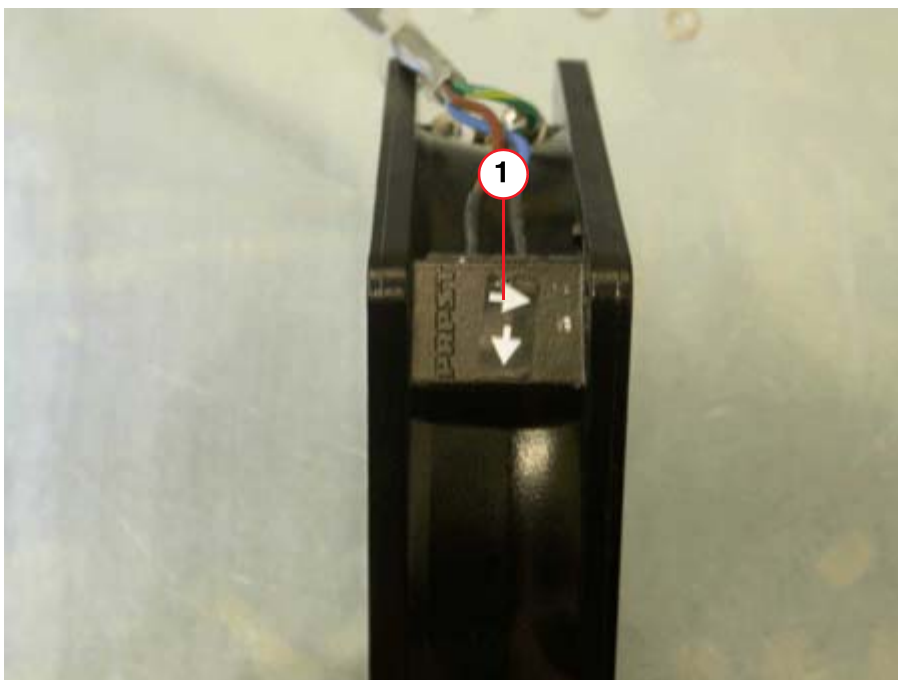


Fig. 38:

Replacement of TFT support arm (mat. no. 57 56 106/57 56 114)

NOTE

This chapter only applies to the TFT support arm mat. no. 57 56 106/57 56 114 delivered until 01/2005.

NOTE

This subchapter only applies if the TFT support arm (mat. no. 57 56 106/57 56 114) is replaced by the same type.

- Switch the system completely off at the control panel.
- To replace the TFT support arm, proceed as described in the document “Installation instructions; TFT Pendant system; UROSKOP Access” (150 88 74/02-2003) supplied by the company ondal Industrietechnik, which can be found in the system binder.

Disassembly of TFT support arm (mat. no. 77 57 565)

NOTE

This chapter only applies to the TFT support arm mat. no. 77 57 565 delivered beginning 01/2005.

- Switch the system completely off at the control panel.
- Remove the cable ties at the traverse element (Fig. 39 / p. 64).

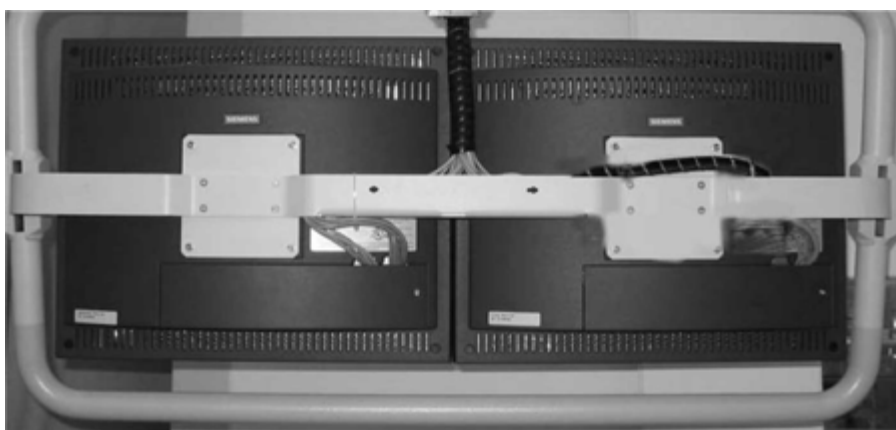


Fig. 39: Monitor installation

- Disconnect the cables of the TFT support arm connected to the flat screens on the flat screens.
- To remove the flat screens, loosen the 4 hexagon-socket head cap screws M4 x 16 (Fig. 40 / p. 64).

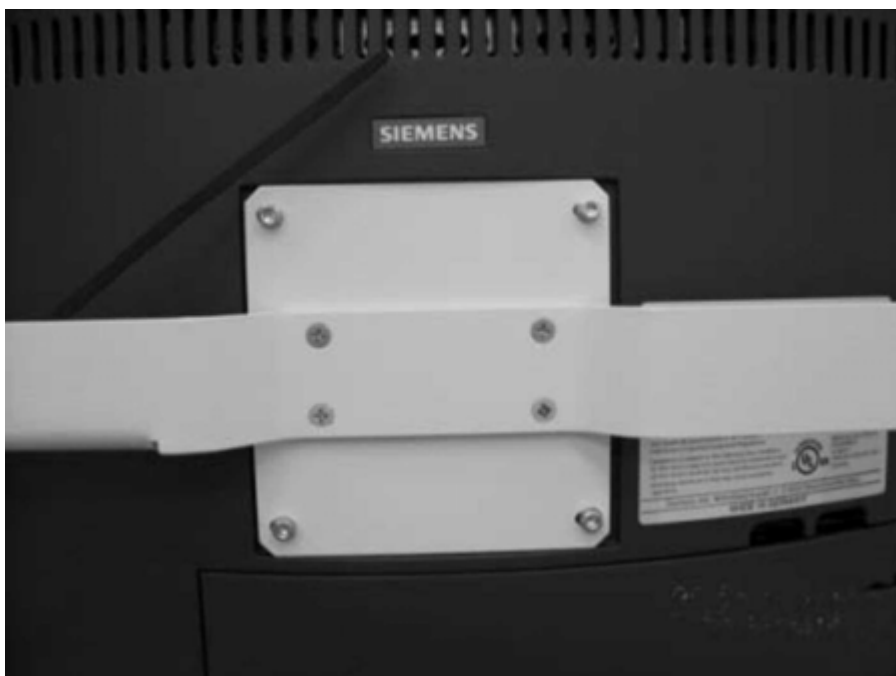


Fig. 40: Monitor attachment on the back

- Mount the transport safety devices to the TFT support arm.
- Remove the cable tie which fixes the connector M12.X5 to partial cable harness W650.

- Remove the cables of the TFT support arm from the fastening bolt for the back wall.
- Remove the 2 cables with BNC connectors (Y,C) and the 9-pin connector X1 from the endoscopy interface (if this option is installed at customer's site).
- Unplug the cable M1.X518 at the corresponding connector of the BUC (module M1).
- Remove the 3 ground wires (M1.PE) from the central ground point of module M1.
- Unplug the cables from the TFT support arm at the connectors of the interface plate.
- Unscrew the partial harness W650 with the interface plate at the unit connection (1/ Fig. 41 / p. 65).

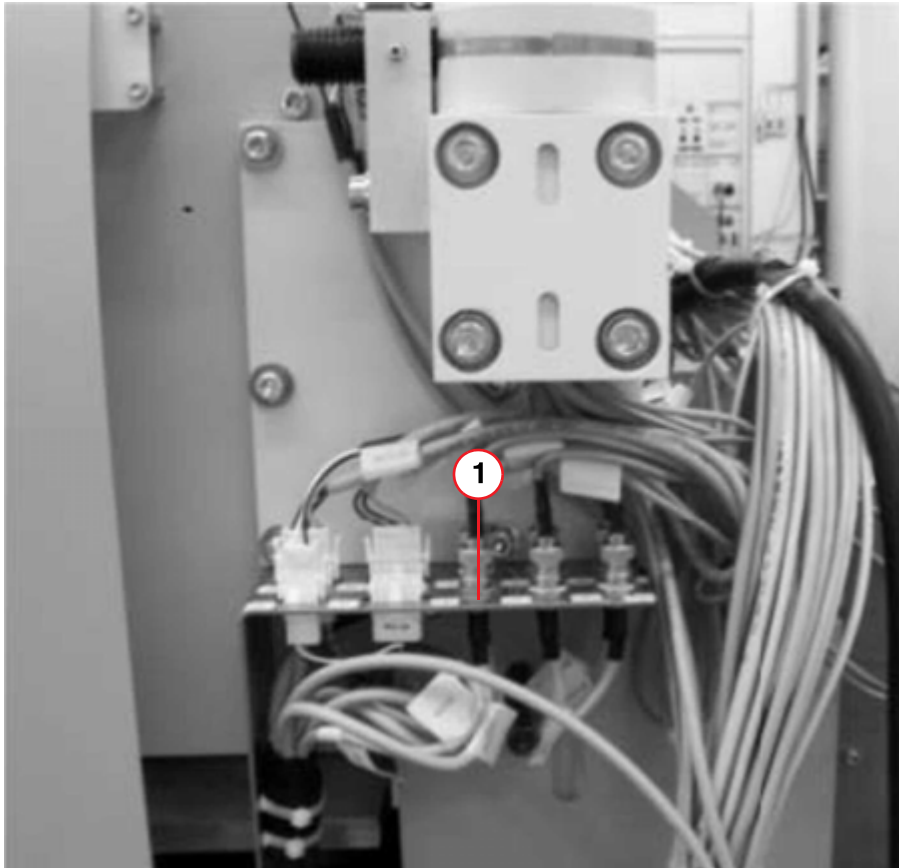


Fig. 41: Support arm connections

- Remove the cylinder-head screw M8 x 25 DIN 912 from the bottom left thread (right-side unit layout) of the total of 5 fastening threads in the unit connection of the TFT support arm.
- Screw the bolt in this thread and screw the securing nut onto the bolt.

CAUTION

The subsequently described loosening of the cylinder-head screws poses a risk of injury.

Proceed with extreme caution.

- ⇒ Secure the TFT support arm when loosening these screws.
- ⇒ A second person must secure the support arm to prevent tipping.

CAUTION

Uncontrolled tilting of the support arm may involve risk of injury.

Proceed with extreme caution.

- ⇒ 2 persons are necessary for disassembling the TFT support arm (approx. 75 kg).
- ⇒ The transport safety devices may not be removed.

- Remove the remaining 4 of the 5 cylinder-head screws M8 x 25 DIN 912 (1/Fig. 42 / p. 66).

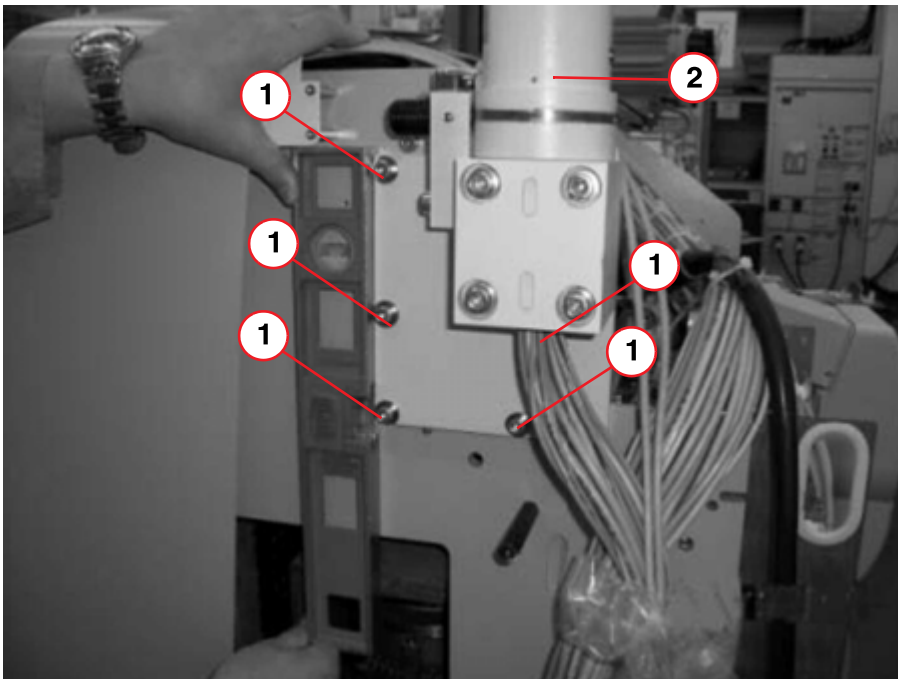


Fig. 42: Support arm connections

- Move the TFT support arm downwards over the bolt.
- Remove the securing nut from the bolt.
- Put the TFT support arm safely to the floor.

Installation of TFT support arm (mat. no. 77 57 565)

NOTE

This chapter only applies to assembling the TFT support arm delivered beginning 01/2005.

- Switch the system completely off at the control panel.

NOTE

Prior to installation of the TFT support arm mat. no. 77 57 565, the disassembly of the TFT support mat. no. 57 56 106/57 56 114 has to be performed as described in document "Installation instructions; TFT Pendant system; UROSKOP Access" (150 88 74/02-2003), supplied by the company ondal Industrietechnik.

If the TFT support arm mat. no. 77 57 565 is currently installed on the system, please follow subchapter "Disassembly of TFT support arm (mat. no. 77 57 565)".

NOTE

The TFT support arm mat. no. 77 57 565 is used for both left-access and right-access systems. The TFT support arm comes as left-access version and has to be adapted for right-access systems as described in document "Installation instructions; TFT Pendant system; UROSKOP Access" (151 98 92), supplied by the company ondal Industrietechnik.

NOTE

Installation of the TFT support arm is identical for the left and right sides but is performed laterally reversed on the opposite side of the lifting base.

 CAUTION

Uncontrolled tilting of the support arm may pose risk of injury. Proceed with extreme caution.

- ⇒ 2 persons are necessary for installing the TFT support arm (approx. 75 kg).
- ⇒ The transport safety devices ([1/2/Fig. 43 / p. 68](#)) may be removed only after the support arm has been installed on the lifting base.



Fig. 43: Transport frame for the support arm

- In the right-side unit layout, screw the bolt into the bottom left thread (M8) of the 5 fastening threads in the unit connection of the TFT support arm (Fig. 46 / p. 70).
- Screw the securing nut onto the bolt (Fig. 46 / p. 70).
- Remove the holder for the TFT support arm from the transport frame (Fig. 44 / p. 68).



Fig. 44: Support arm attachment

CAUTION

The subsequently described loosening of the cylinder-head screws poses a risk of injury.

Proceed with extreme caution.

⇒ Secure the TFT support arm when loosening these screws.

- Loosen the remaining 4 of the 5 cylinder-head screws M8 x 25 DIN 912 (1/Fig. 45 / p. 69) and remove them with the underlying washers 8.2 x 20 x 2.

NOTE

Ensure that the radiation warning light is not damaged, for example.

- Loosen all cylinder-head screws M8 x 25 DIN 912 from the wedge-shaped transport holder (2/Fig. 45 / p. 69) and remove it.

NOTE

Follow a laterally reversed procedure for a left-side unit layout.

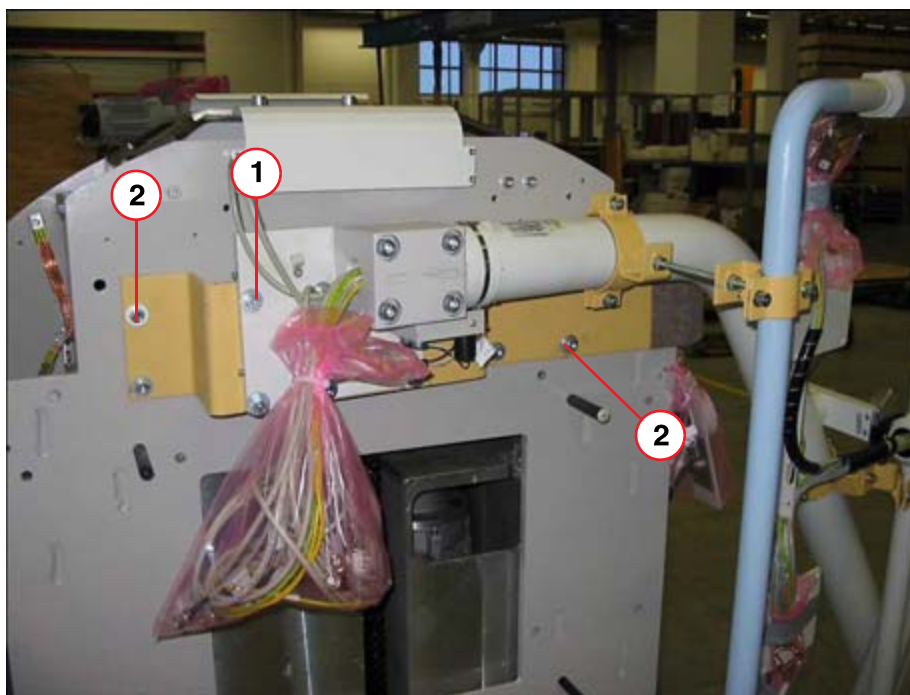


Fig. 45: Unit connection - transport

NOTE

The 5 fastening threads are located on the back of the lifting base.

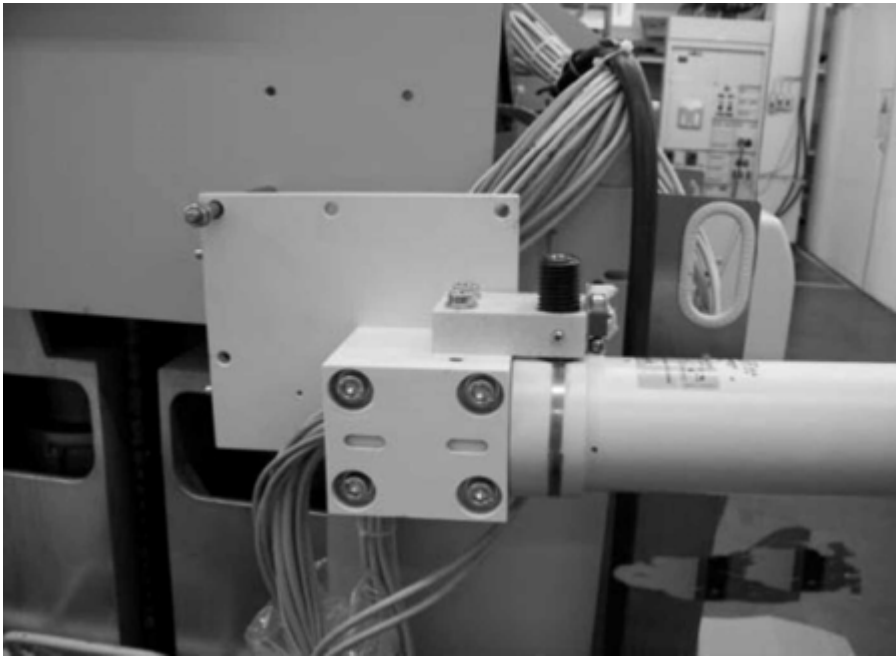


Fig. 46: Unit connection for the support arm

- Move the TFT support arm upward over the bolt.

NOTE

The second person secures the support arm to prevent tipping.

- Secure the unit connection of the TFT support arm to the lifting base using the 4 previously removed cylinder-head screws M8 x 25 DIN 912 including washer 8.2 x 20 x 2 ([1/Fig. 47 / p. 71](#)).
- Remove the bolt ([Fig. 46 / p. 70](#)).
- Screw in the fifth cylinder-head screw M8 x 25 DIN 912 including washer 8.2 x 20 x 2 instead of the bolt.

NOTE

Use a level to align the unit connection ([Fig. 47 / p. 71](#)).

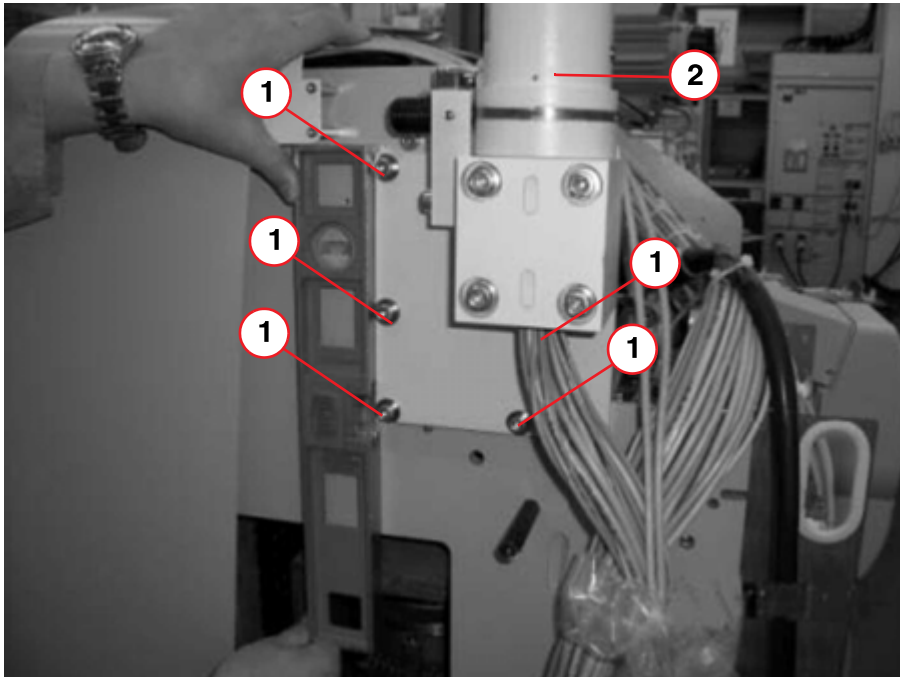


Fig. 47: Support arm connections

- Tighten all 5 cylinder-head screws M8 x 25 DIN 912 with a tightening torque of **23.5 Nm $\pm$ 0.5 Nm**.
- Secure the 5 cylinder-head screws with Loctite 221.
 - Loctite 221 is included in the scope of delivery.
- Screw partial harness W650 with the interface plate onto the unit connection via 2 screws M4 x 10 DIN 912 ([1/ Fig. 48 / p. 72](#)).

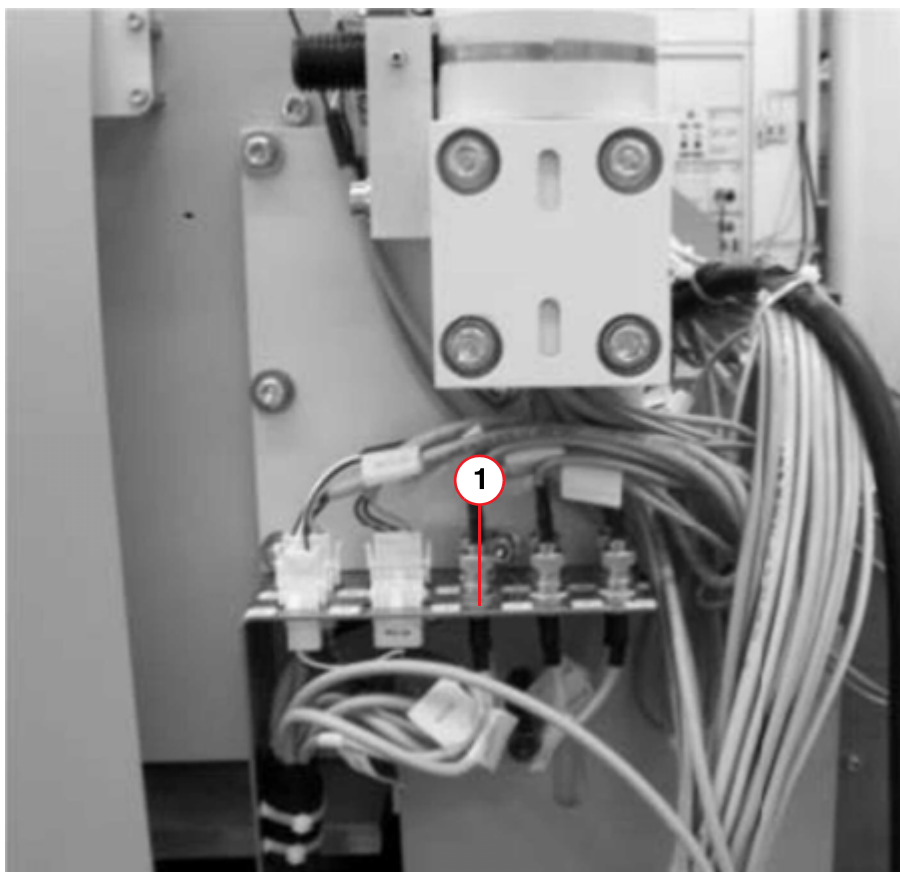


Fig. 48: Support arm connections

- Plug the cables from the TFT support arm into the connectors of the interface plate according to their designations.
- Screw the 3 ground wires (M1.PE) onto the central ground point of module M1 using 1 lock washer S4, 1 serrated washer A4.3 DIN 6798 and 1 screw M4 x 12, DIN 912.
 - The fasteners are included in the scope of delivery.
- Plug cable M1.X518 into the corresponding connector of BUC (module M1).
- Run the 2 cables with BNC connectors (Y, C) and 9-pin connector X1 to the endoscopy interface and plug them in according to the labels.
- Fasten the cables to the fastening bolt for the back wall.

NOTE

If there is no endoscopy interface option, fasten the cable ends to the fastening bolt so that safe operation is ensured.

- Attach connector M12.X5 with cable ties to partial cable harness W650 since it is not used for the UROSKOP Access.
- Remove the transport safety device from the TFT support arm ([1/2/ Fig. 43 / p. 68](#)) and store these for disassembly of the TFT support arm.
- Install the TFT flat screens according to document "Installation instructions; TFT Pendant system; UROSKOP Access" (151 98 92) supplied by the company ondal Industrietechnik.

- Attach the flat screens with 4 hexagon-socket-head cap screws M4 x 16 ([Fig. 49 / p. 73](#)).

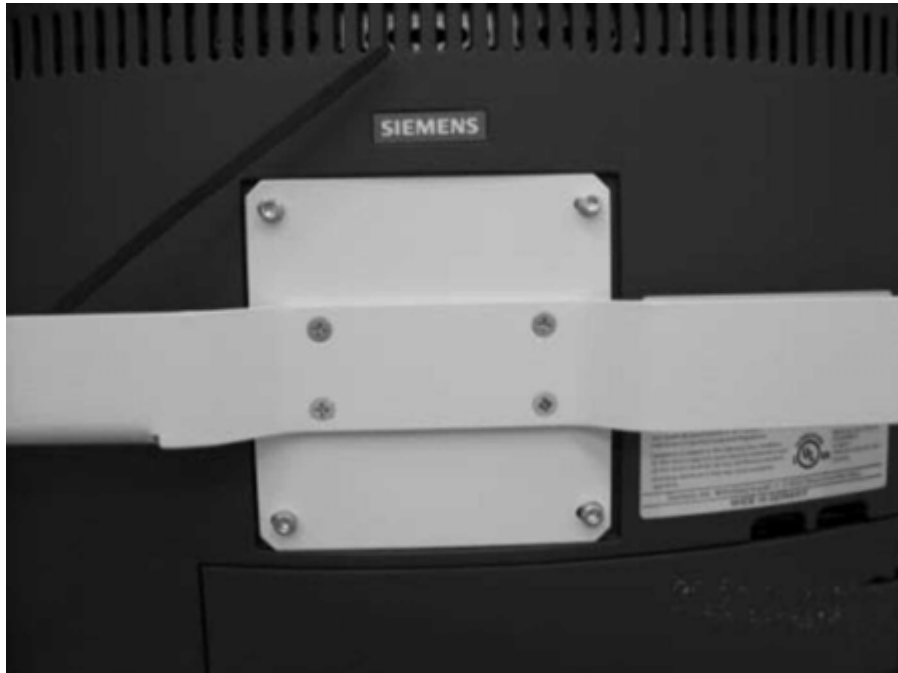


Fig. 49: Monitor attachment on the back

- Push the flat screen lightly together in the middle until there is no gap.
- Position the flat screens at the same height, adjust to parallel, and secure them via screws.
- Connect the cables of the TFT support arm to the flat screens according to the labels.

NOTE

The cables must not be bent or crushed during installation and attaching the cover.

- Fasten the cables via cable ties to the traverse element ([Fig. 50 / p. 73](#)).

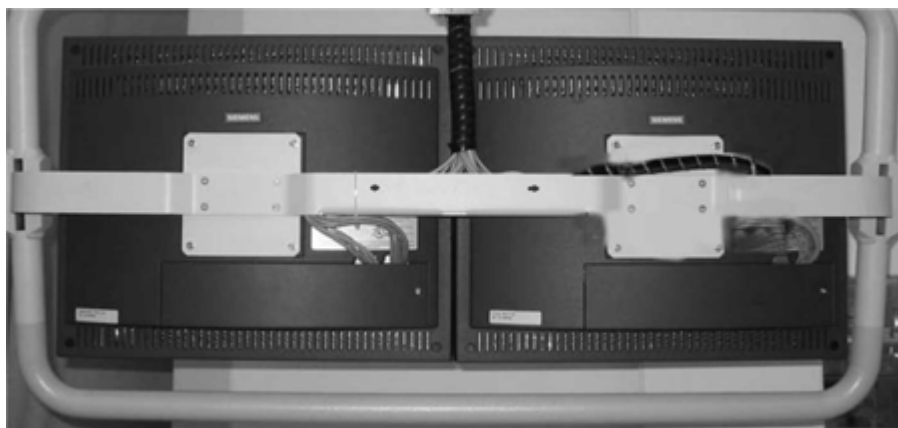


Fig. 50: Monitor installation

Cassette

Safety notes

NOTE

When work is performed on the cassette, the removed screws of the covers and components must be sorted and placed on the side to avoid confusion of the screws and screw lengths.

CAUTION

The safety information in chapter ([Prerequisites / p. 5](#)) must be observed at all times.

When replacing parts or making checks always switch the system off.

- ⇒ In order to remove the covers, it is sometimes necessary to move the unit, especially the tabletop. To remove the covers it is therefore sufficient to actuate the EMERGENCY STOP of the unit on the table or on the lifting column and to release the EMERGENCY STOP when movement is required.

Grid and Iontomat chamber

- Raise the tabletop and snap the holding bar into position, see also ([Tabletop / p. 23](#)).



Fig. 51: Spray protective cover



Fig. 52: Cassette cover (1)

- To remove the mounting screws of the spray protection cover, the tabletop must be moved in each case in the transverse direction up to the column and then away from the column up to the end, see ([Fig. 51 / p. 74](#)).
- Remove the spray protection.
- To remove the screws of the cassette cover, the tabletop must be moved in each case in the transverse direction up to the column and then away from the column to the end, see ([Fig. 52 / p. 74](#)) and ([Fig. 53 / p. 75](#)).



Fig. 53: Cassette cover (2)



Fig. 54: Cassette cover (3)

- To remove the cover, move the table centrally in transverse direction.
- Raise the cover and push it in the direction of the column until the plate can be raised and then removed, see (Fig. 54 / p. 75).
- Operate the cassette ejection button to move the cassette into the park position.
- Press the **EMERGENCY STOP**.

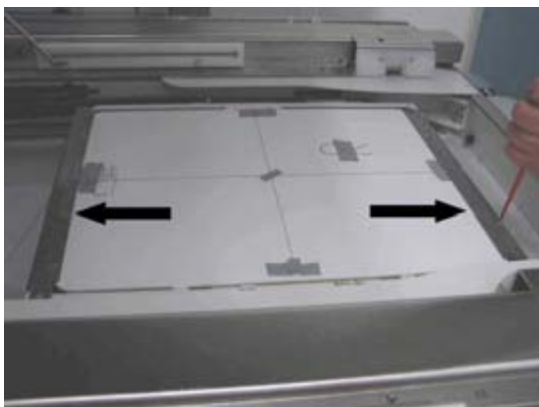


Fig. 55: Cassette grid



Fig. 56: Cassette grid position

- Unscrew and remove the retaining rails, see (Fig. 55 / p. 75).
- Remove the grid.
- When installing the grid, note the position of the grid in relation to the anode of the X-ray tube, see (Fig. 56 / p. 75).

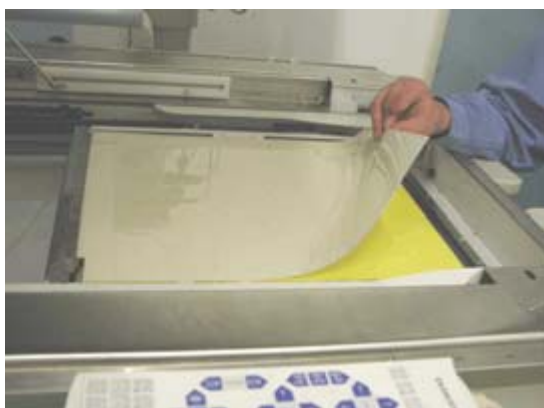


Fig. 57: *Cassette foil*



Fig. 58: *Cassette lontomat*

- Remove the protective foil of the lontomat chamber, see (Fig. 57 / p. 76).
- Mark the top of the lontomat plug with a felt pen.
- To remove the plug of the lontomat chamber in the generator on D100.X33.A, switch the generator off briefly with switch S2 in the generator and switch it back on again with S1.
- Remove the connection plug of the lontomat and replace the lontomat chamber, see (Fig. 58 / p. 76).
- The grid or the lontomat chamber is installed in the reverse order.
- Check the cassette with the aid of the latest document "Startup; System" (SPL5-330.815.01 for UROSKOP Access with ASPIA imaging system; SPL5-330.815.06 for UROSKOP Access with FLUOROSPOT Compact imaging system).

Motor M110, cassette drive

- To simplify the replacement of the motor for the cassette drive, the tabletop must first be removed, see (Tabletop / p. 23).

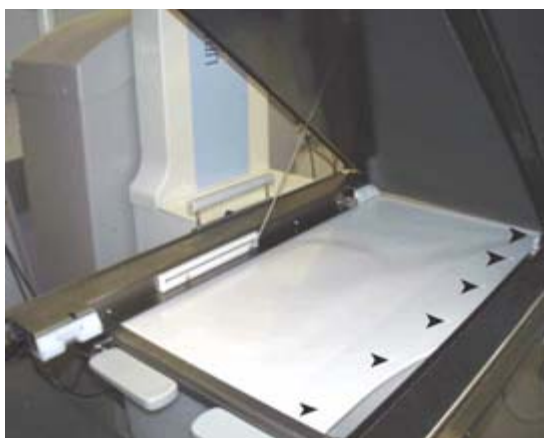


Fig. 59: *Spray protective cover*



Fig. 60: *Cassette cover (1)*

- To remove the mounting screws of the spray protection cover, the tabletop must be moved in each case in the transverse direction up to the column and then away from the column up to the end, see (Fig. 59 / p. 76).
- Remove the spray protection.
- To remove the screws of the cassette cover, the tabletop must be moved in each case in the transverse direction up to the column and then away from the column up to the end, see (Fig. 60 / p. 76) and (Fig. 61 / p. 77).



Fig. 61: Cassette cover (2)



Fig. 62: Cassette cover (3)

- To remove the cover, move the table centrally in the transverse direction.
- Raise the cover and push it in the direction of the column until the plate can be raised and then removed, see (Fig. 62 / p. 77).
- Move the system longitudinally to the head end.
- Press the **EMERGENCY STOP**.

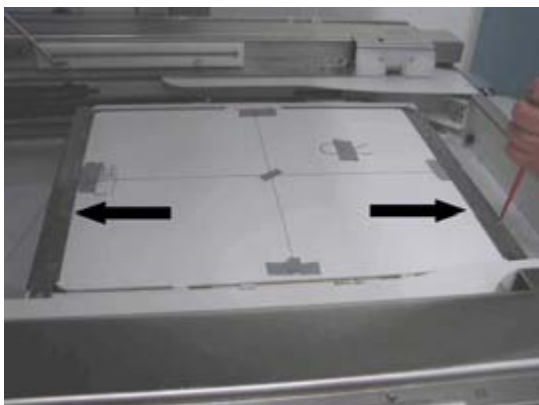


Fig. 63: Cassette grid



Fig. 64: Cassette grid position

- Unscrew and remove the retaining rails, see (Fig. 63 / p. 77).
- Remove the grid.
- On installation of the grid, note the position of the grid in relation to the anode of the X-ray tube, see (Fig. 64 / p. 77).

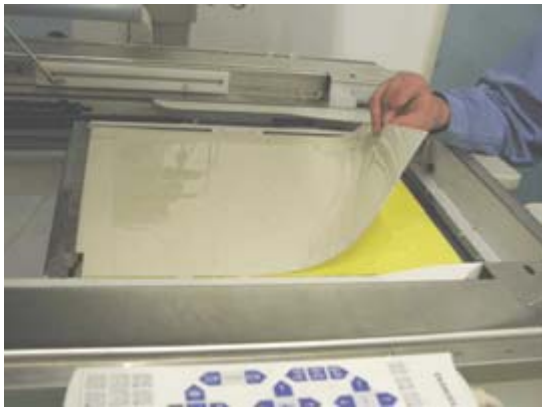


Fig. 65: Cassette foil



Fig. 66: Motor M110

- Remove the protective foil of the lontomat chamber, see (Fig. 65 / p. 78).
- Mark the top of the lontomat plug with a felt pen.
- To remove the plug of the lontomat chamber in the generator on D100.X33.A, switch off the generator briefly with switch S2 in the generator and switch it back on with S1.
- Remove the connection plug of the lontomat and remove the lontomat chamber.
- Remove the connection cables on motor M110, label them if necessary, see (Fig. 66 / p. 78).



Fig. 67: Retaining block



Fig. 68: Cover

- Remove the retaining block for the spray protection at the foot end, see (Fig. 67 / p. 78).

- Select **Components > Uroskop** in the XCS SSW (the UROSKOP Access SSW starts) and then select **Diagnostic > Tests**.
 - A window appears with the following menu items: **Movement with service buttons** (2/ Fig. 69 / p. 79) and **Cassette system** (1/ Fig. 69 / p. 79).
 - Select **Execute** (The following window appears (Fig. 70 / p. 79)).
 - Select the radio button **Cassette drive** under **Drive** (1/ Fig. 70 / p. 79).
 - Move the cassette to the foot end.

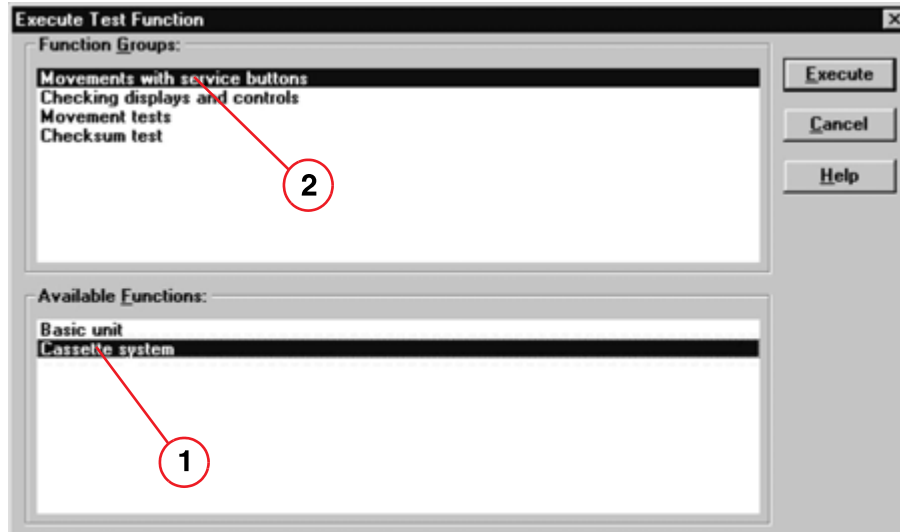


Fig. 69: Window "Execute Test Function"

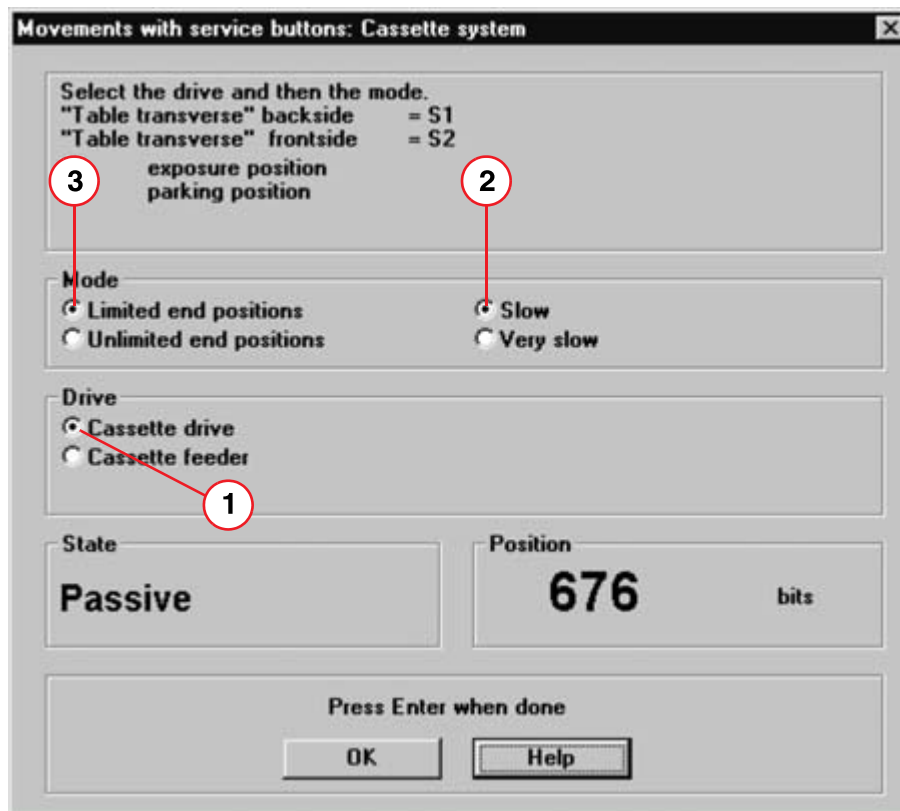


Fig. 70: Window "Movements with service button: Cassette system"

- Press the **EMERGENCY STOP**.

- Remove the 2 screws at the head end from the spray protection, see (Fig. 68 / p. 78).

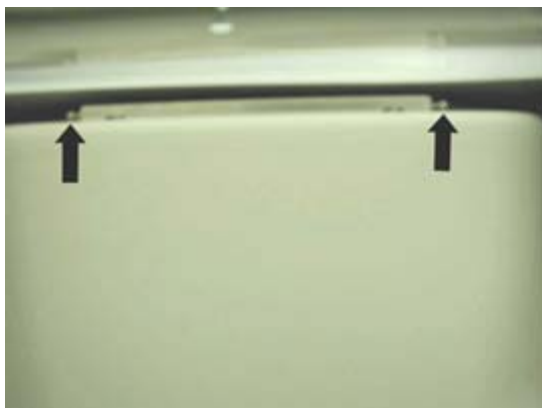


Fig. 71: Image intensifier grid



Fig. 72: Unit tilted to the foot end

- Remove the image intensifier grid, press the two retaining bolts for this, see (Fig. 71 / p. 80).
- Tilt the unit to the foot end, see (Fig. 72 / p. 80).
- Press the **EMERGENCY STOP**.



Fig. 73: Image intensifier collision protection (1)



Fig. 74: Image intensifier collision protection (2)

- Remove the image intensifier protection, see (Fig. 73 / p. 80).
- Remove the image intensifier collision protection, see (Fig. 74 / p. 80).



Fig. 75: Rolling shutter (1)



Fig. 76: Image intensifier collision protection (3)

- Remove the screws of the rolling shutter, see (Fig. 75 / p. 81) and push the rolling shutter up.
- Loosen the lateral mounting screws from the lower image intensifier protection, see (Fig. 76 / p. 81).



Fig. 77: Spray protection (2)

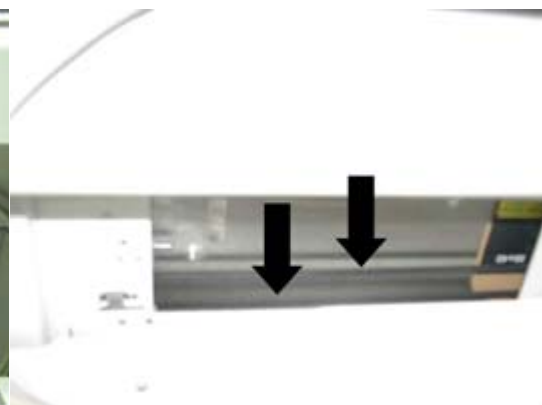


Fig. 78: Toothed belt (1)

- Remove the screws from the spray protection, see (Fig. 77 / p. 81).
- Move the unit to the foot end.
- Remove the remaining screws from the spray protection under the image intensifier, and hold the spray protection firmly.
- Tilt the unit to the head end to remove the spray protection.
- Press the **EMERGENCY STOP**.
- Separate the toothed belt for drive motor M110, cassette tray on both sides, see (Fig. 78 / p. 81).

- Select **Components > Uroskop** in the XCS SSW (the UROSKOP Access SSW starts), then select **Diagnostic > Tests**.
 - A window appears with the following menu items: **Movement with service buttons** (2/ Fig. 69 / p. 79) and **Cassette system** (1/ Fig. 69 / p. 79)
 - Select **Execute** (The following window appears (Fig. 79 / p. 82)).

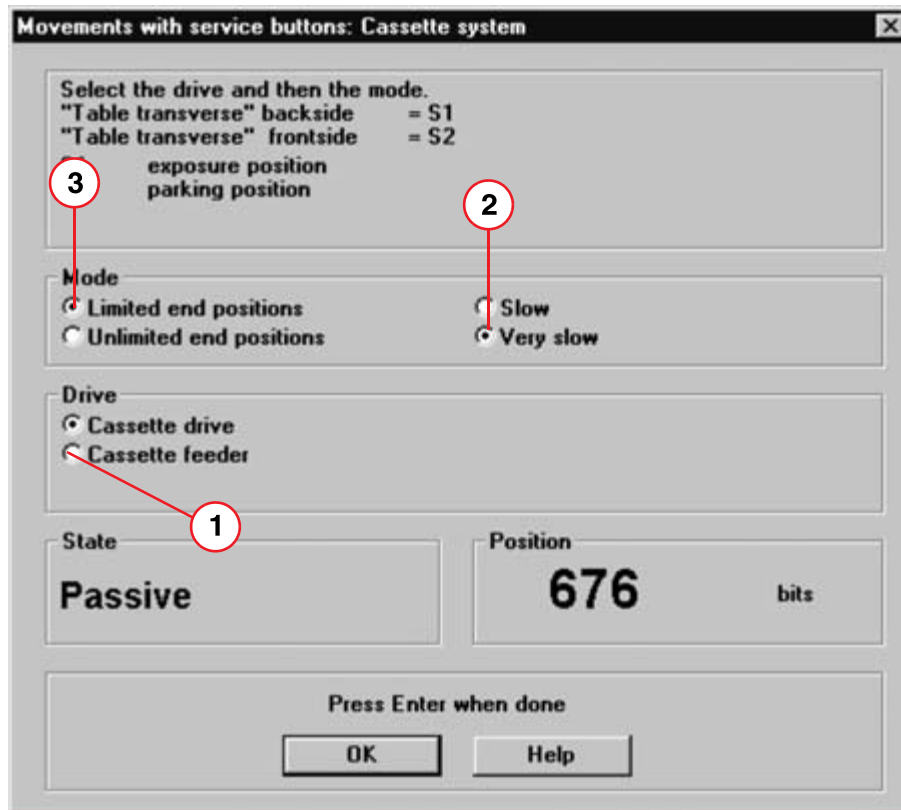


Fig. 79: Window "Movements with service button: Cassette system"

- Select **Cassette drive** and **very slow** (1/2/ Fig. 79 / p. 82).
- Move the cassette centrally in front of the opening.
- Open the cassette flap slightly.
- Press the **EMERGENCY STOP**.



Fig. 80: Cassette tray (1)

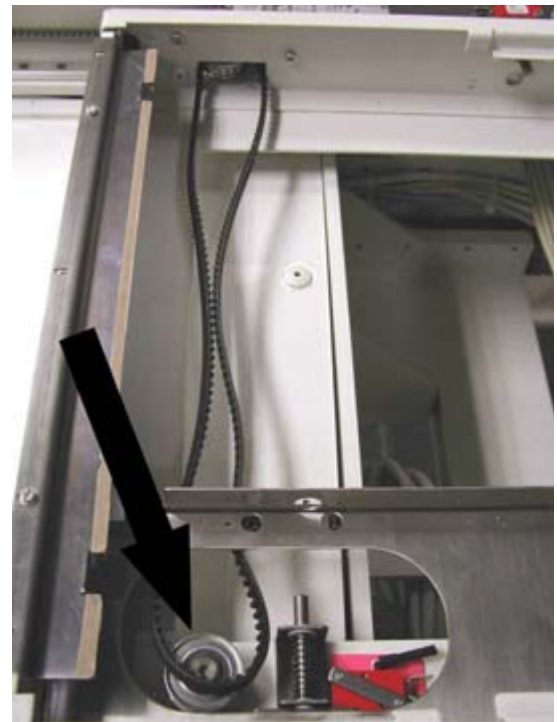


Fig. 81: Toothed belt (2)

- Pull the cassette tray forward and remove the cassette, see (Fig. 80 / p. 83).
- Loosen the toothed belt tensioner on the drive wheel of the cassette tray, see (Fig. 81 / p. 83).



Fig. 82: Cassette tray (1)



Fig. 83: Toothed belt (2)

- Remove the cassette guide, see arrows (Fig. 82 / p. 83) and (Fig. 83 / p. 83).
- Remove drive motor M110 with gear.
- Fit the toothed belt on the motor gear and install the new motor, see (Fig. 82 / p. 83).
- Plug in the connection cables.
- Place the toothed belt over the drive wheel of the cassette tray.
- Tension the toothed belt tensioner on the drive wheel of the cassette tray again.

- Fasten the cassette guide on the toothed belt, see arrows (Fig. 82 / p. 83) and (Fig. 83 / p. 83).
- Check the function of the cassette tray with the loading button.
- Press the **EMERGENCY STOP**.
- Assembly all in reverse order.
- Check the cassette with the aid of the latest document "Startup; System" (SPL5-330.815.01 for UROSKOP Access with ASPIA imaging system; SPL5-330.815.06 for UROSKOP Access with FLUOROSPOT Compact imaging system).

Motor M90, cassette drive

- To simplify the replacement of the motor for the cassette drive, the tabletop must be removed, see (Tabletop / p. 23).

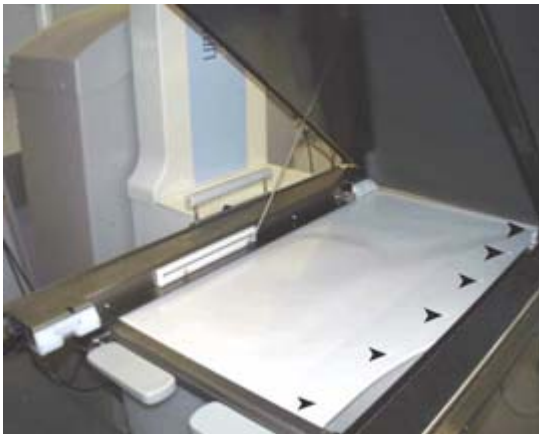


Fig. 84: Spray protective cover



Fig. 85: Cassette cover (1)

- To remove the mounting screws of the spray protection cover, the tabletop must be moved in each case in the transverse direction up to the column and then away from the column up to the end, see (Fig. 84 / p. 84).
- Remove the spray protection.
- To remove the screws of the cassette cover, the tabletop must be moved in each case in the transverse direction up to the column and then away from the column to the end, see (Fig. 85 / p. 84) and (Fig. 86 / p. 85).



Fig. 86: Cassette cover (2)



Fig. 87: Cassette cover (3)

- To remove the cover, move the table centrally in the transverse direction.
- Raise the cover and push it in the direction of the column until the plate can be raised and then removed, see (Fig. 87 / p. 85).



Fig. 88: Column cover

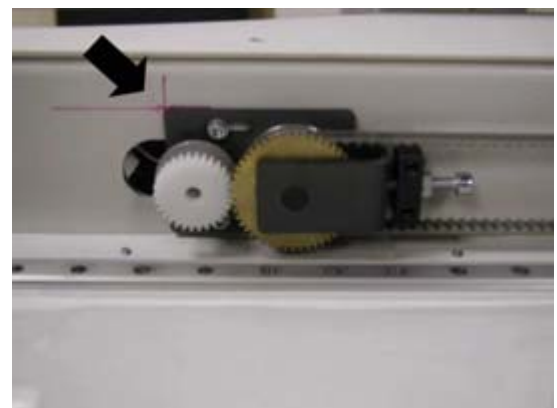


Fig. 89: Tensioning device

- Remove the cover on the column, see (Fig. 88 / p. 85).
- Press the **EMERGENCY STOP**.
- Mark the fastening of the tensioning device of the cassette drive, see (Fig. 89 / p. 85).

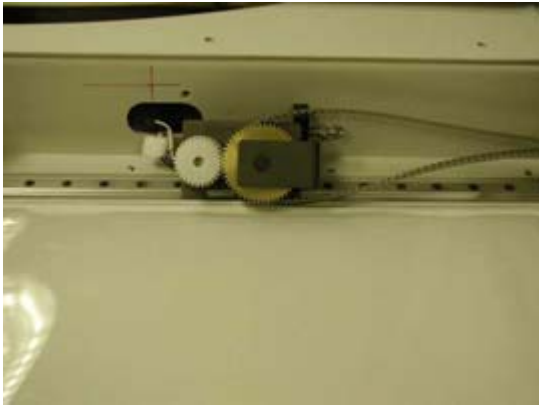


Fig. 90: Tensioning device (2)

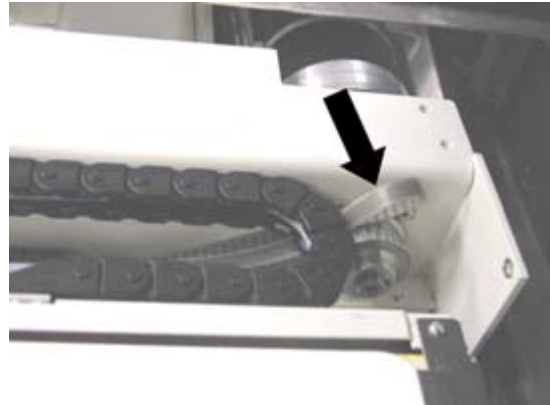


Fig. 91: Tensioning device (3)

- Remove the tensioning device to relieve the belt, see (Fig. 90 / p. 86).
- Remove the toothed belt on the motor from the sprocket, see (Fig. 91 / p. 86).

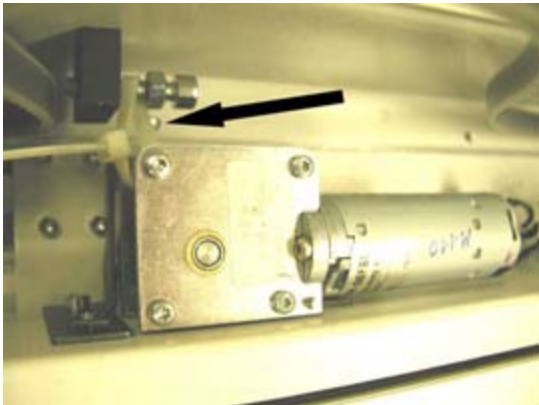


Fig. 92: Cassette carriage securing



Fig. 93: Cover M90

- Fasten the tensioning device of the cassette drive, refer to (Fig. 89 / p. 85).
- Secure the cassette carriage against movement with a cable tie on the tensioning screw of the tensioning device, see (Fig. 92 / p. 86).
- Tilt the unit to the foot end.
- Remove the cover from the drive, see (Fig. 93 / p. 86).
- Press the **EMERGENCY STOP**.



Fig. 94: M90 plug

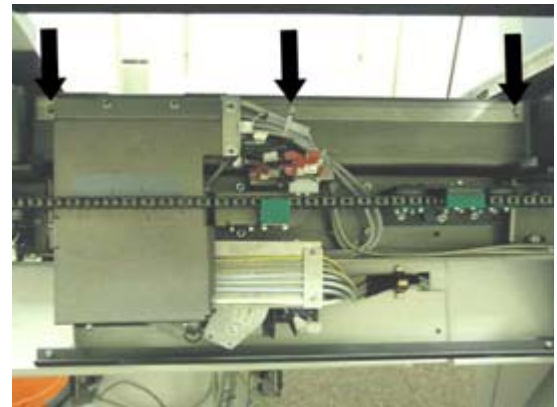


Fig. 95: Retaining bracket

- Remove plugs X90 and B90, see (Fig. 94 / p. 87).
- Remove the retaining bracket for the upper cover, see (Fig. 95 / p. 87).

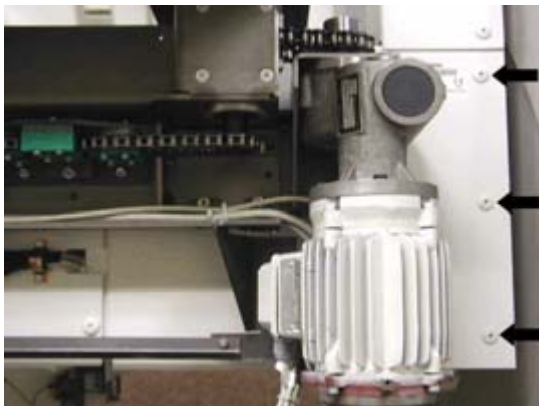


Fig. 96: Cover column (2)



Fig. 97: M90 shaft

- Remove the side cover on the lifting column, see (Fig. 96 / p. 87).
- Remove the sprocket from the shaft of M90 and loosen the screws of the motor, see (Fig. 97 / p. 87).
 - Check whether a new sprocket was delivered with the motor M90, since the old sprocket can be damaged.
 - If necessary, heat the screws for loosening, e.g., with a gas soldering iron.

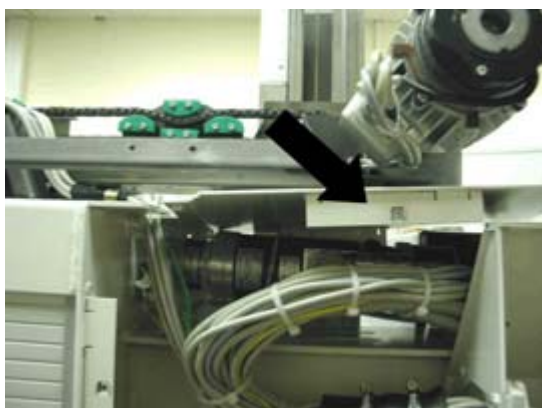


Fig. 98: Cover M90 (2)

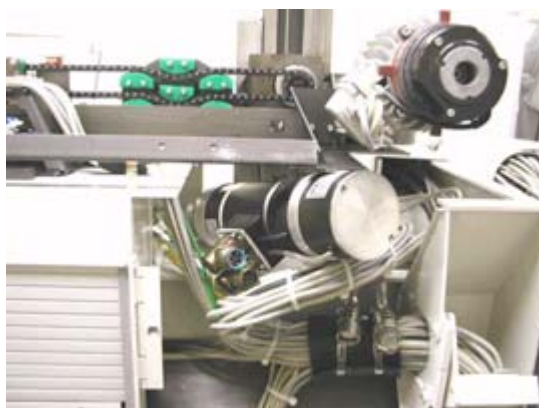


Fig. 99: M90

- Remove the cover of the motor, see [\(Fig. 98 / p. 88\)](#).
- Press the tied cables to the side to replace the motor, see [\(Fig. 99 / p. 88\)](#).
- Do not fasten the new motor firmly to refit the cover, see [\(Fig. 98 / p. 88\)](#).
- Connect plugs X90 and B90.
- Fasten the motor firmly.

- Select **Components > Uroskop** in the XCS SSW (the UROSKOP Access SSW starts), then select **Diagnostic > Tests**.
 - A window appears with the following menu items: **Movement with service buttons** (2/ Fig. 69 / p. 79) and **Cassette system** (1/ Fig. 69 / p. 79)
 - Select **Execute** (The following window appears (Fig. 100 / p. 89)).

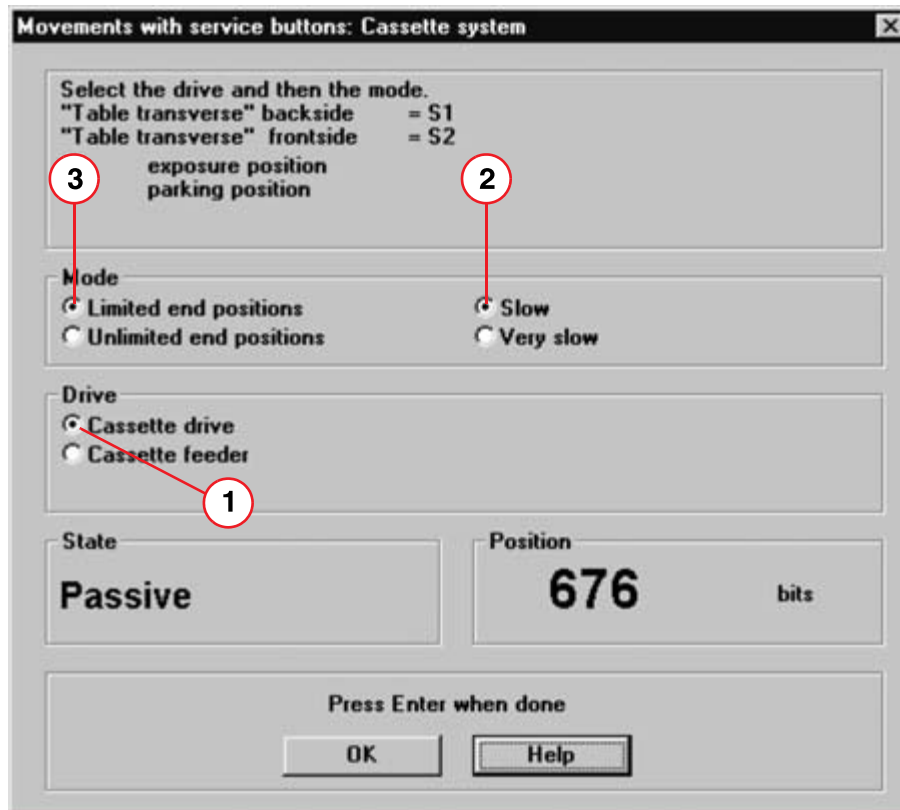


Fig. 100: Window "Movements with service button: Cassette system"

- Select **Cassette drive** (1/ Fig. 100 / p. 89).
- Test the function of the motor in the service mode.
- Note the position of the dog on the shaft, so that the grub screw for the sprocket can be screwed tight later (accessibility with socket wrench).
- Tilt the unit back horizontal, bring it into 0° position.
- Press the EMERGENCY STOP.



Fig. 101: Soldering iron

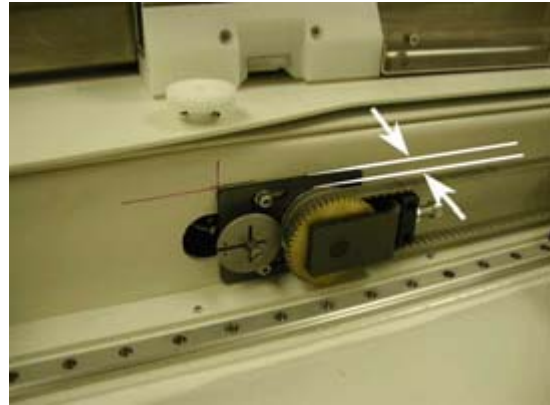


Fig. 102: Sprocket distance

- Unscrew the grub screw from the new sprocket sufficiently so that the sprocket cannot jam.
- Heat the new sprocket so that it can be fitted more easily, e.g., with a soldering iron, see (Fig. 101 / p. 90).
- To permit the toothed belt to run parallel, the distances of the sprockets to the housing must be the same. Measure and note the distance at the tensioning device, see (Fig. 102 / p. 90).
- Use the same distance for the sprocket on the motor.

NOTE

**The sprocket is made of aluminum and is easy to damage.
Push the sprocket carefully onto the shaft.**

- Push the sprocket onto the shaft and let it cool.
- Tighten the grub screw in the sprocket.
- Remove the cable tie from the cassette/toothed belt tensioner again.
- Remove the toothed belt tensioner to fasten the toothed belt onto the sprocket of the motor.

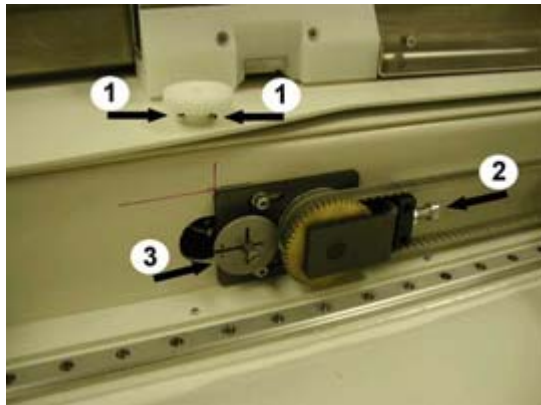


Fig. 103: Sprocket potentiometer tensioner

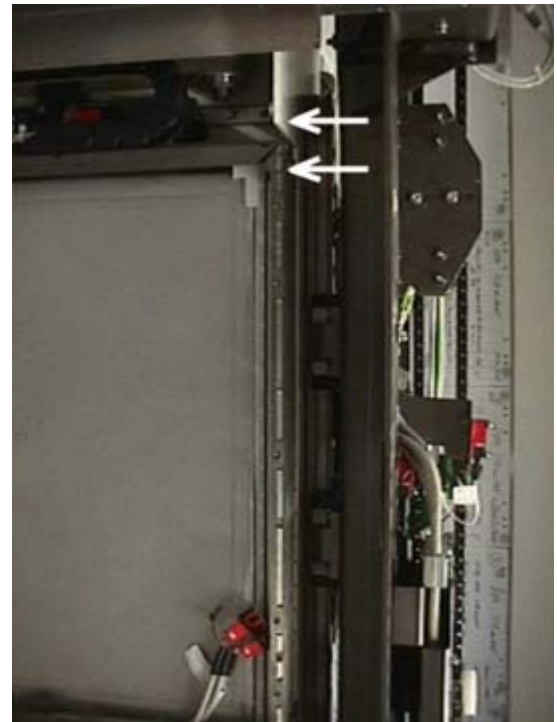


Fig. 104: Cassette adjustment

- Loosen the grub screws from the sprocket for the potentiometer and remove the sprocket, see [\(1/Fig. 103 / p. 91\)](#).
- Fasten the toothed belt tensioner at the marked place.
- Tension the toothed belt with the tensioning screw, see [\(2/Fig. 103 / p. 91\)](#).
- Check that the cassette tray is drawn in completely and that switch S112 (cassette rear) is fully operated.

- Select **Components > Uroskop** in the XCS SSW (the UROSKOP Access SSW starts), then select **Diagnostic > Tests**.
 - A window appears with the following menu items: **Movement with service buttons** (2/Fig. 69 / p. 79) and **Cassette system** (1/Fig. 69 / p. 79)
 - Select **Execute** (The following window appears (Fig. 105 / p. 92)).

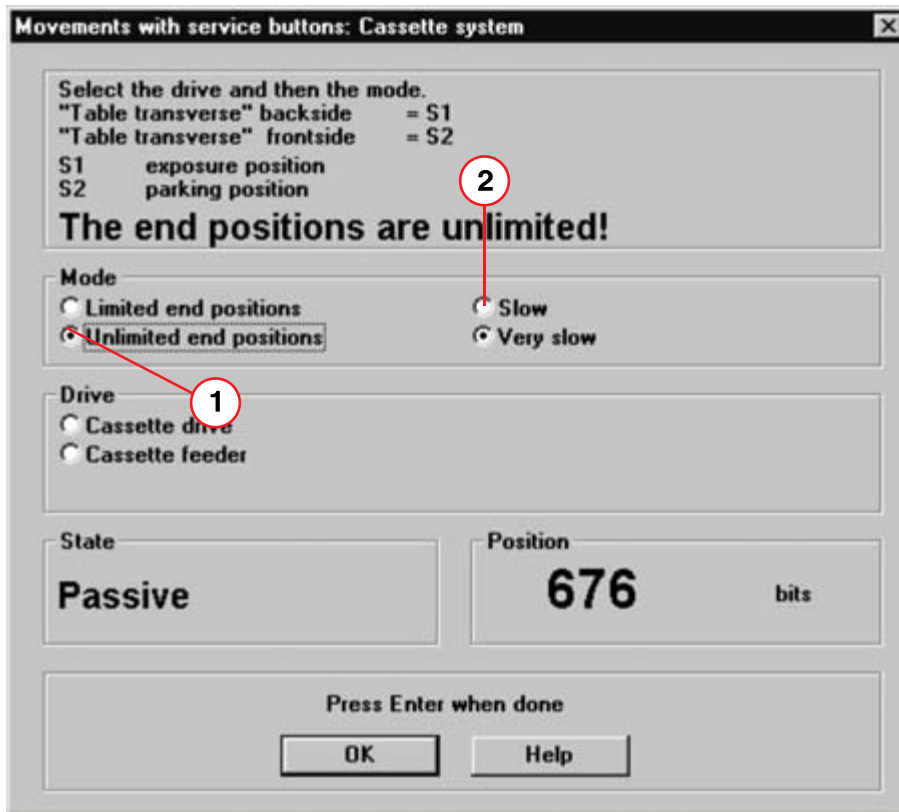


Fig. 105: Window "Movements with service button: Cassette system"

- Select **Unlimited end positions** and **very slow** (1/2/Fig. 105 / p. 92).
- Move the cassette to the position for the potentiometer zero adjustment, see (Fig. 104 / p. 91).

- In the UROSKOP Access SSW select the menu item **Adjustment > Calibration** and then **Cassette drive, Potentiometer adjustment** (1/2/Fig. 106 / p. 93).

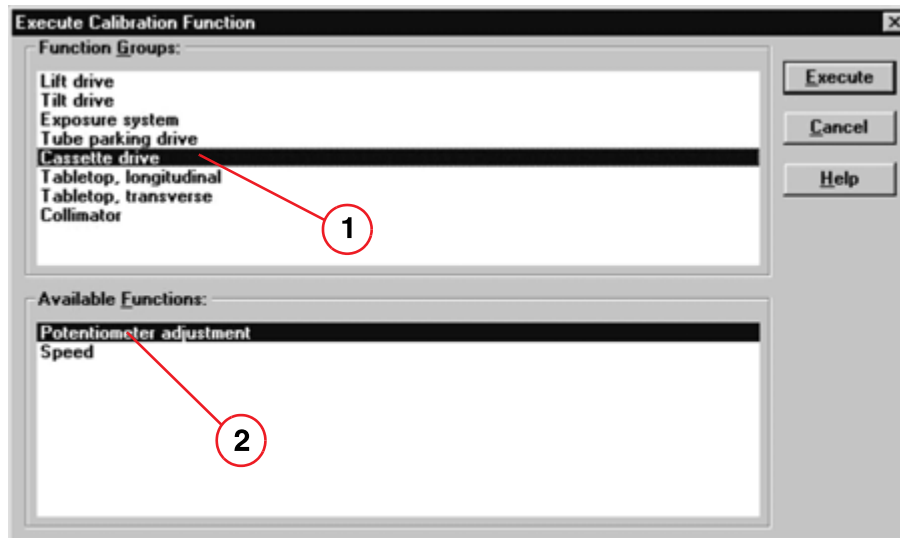


Fig. 106: Window "Movements with service button: Cassette system"

- Turn the potentiometer until the tolerance value is approx. "Zero", see (3/Fig. 103 / p. 91)
 - An acoustic signal sounds.
- Fasten the sprocket for the potentiometer with the grub screws without turning the potentiometer.

- Select **Components > Uroskop** in the XCS SSW (the UROSKOP Access SSW starts), then select **Diagnostic > Tests**.
 - A window appears with the following menu items: **Movement with service buttons** (2/ Fig. 69 / p. 79) and **Cassette system** (1/ Fig. 69 / p. 79)
 - Select **Execute** (The following window appears (Fig. 100 / p. 89)).

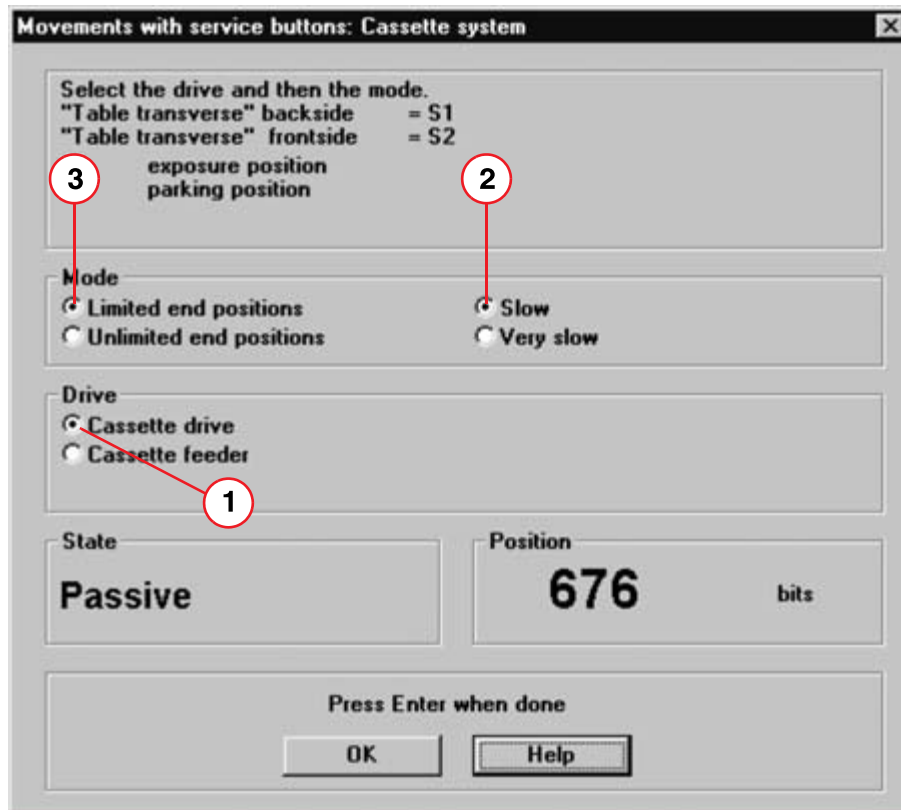


Fig. 107: Window "Movements with service button: Cassette system"

- Select **Cassette drive**, **Limited end position** and **slow** (1/2/3/ Fig. 107 / p. 94).
- Test the function of the cassette.
- Switch the generator off briefly with switch S2 in the generator and back on with S1.
- Test the function of the cassette once again.
- Press the emergency stop.
- Refit all covers.
- Check the cassette with the aid of the latest document "Startup; System" (SPL5-330.815.01 for UROSKOP Access with ASPIA imaging system; SPL5-330.815.06 for UROSKOP Access with FLUOROSPOT Compact imaging system).

Cassette position switches S112 and S119

- The covers are removed as described in subchapter (Motor M110, cassette drive / p. 76) because the switches are located next to the M110.



Fig. 108: Cassette S112 / S119 (1)

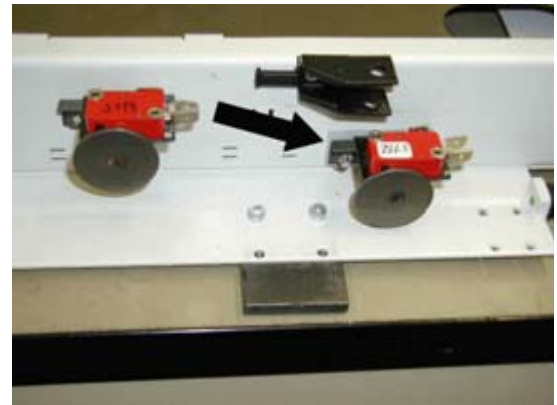


Fig. 109: Cassette S112/S119 (2)

- Switch S119 (cassette sensed) is located in front of motor M110, and switch S112 (cassette rear) is located further away from motor M110, see (Fig. 108 / p. 95).
- S112 is located on a small distance plate, see (Fig. 109 / p. 95).
- Before replacing a switch, check the labeling of the connection cables.
- Assemble it in the reserve order.
- Check the function of the position switches.

Cassette position switch S113

- Remove the covers as described in subchapter (Motor M110, cassette drive / p. 76).
- Before replacing a switch, check the labeling of the connection cables.



Fig. 110: Cassette S113 (1)



Fig. 111: Cassette S113 (2)

- The mounting screws for S113 (cassette front) cannot be removed from above, see (Fig. 110 / p. 95).
- The mounting screws of the S113 are accessible from the back, see (Fig. 111 / p. 95).
- Assemble it in the reverse order.
- Check the function of position switch S113.

Cassette loading flap switch S98

- To replace the S98 for the cassette tray, raise the tabletop and snap in the retaining bar.

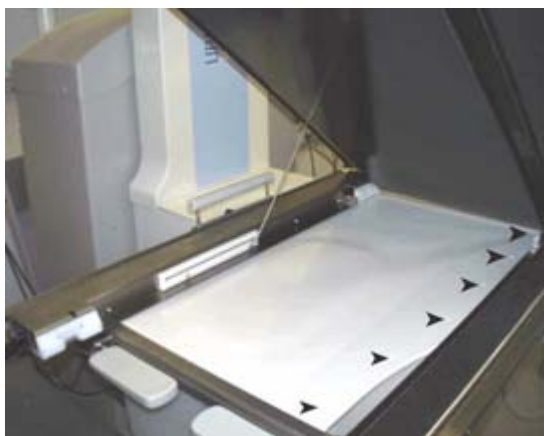


Fig. 112: Spray protective cover



Fig. 113: Switch S98

- To remove all mounting screws of the spray protection cover, the tabletop must be moved in transverse direction up to the column and then away from the column up to the end, see (Fig. 112 / p. 96).
- Remove the spray protection.
- Remove the connection cables at the S98, label them if necessary.
- Mark the position of switch S98 and insulating plate with a pen, see (Fig. 113 / p. 96).
- Replace the switch.
- Check the function of the switch.

Endoscopy interface

- Switch the system **off**.
- Remove the rear cover of the lifting base.
- Remove all cables. Note the designations. If necessary, mark the cables.
- Replace the endoscopy interface.
- Once the system has powered up, no LED must light up at the endoscopy interface.
- On the hand control unit, press the **Ref / Endo / US** key to select the image source.
- If the optional system foot switch is used, switch over the image sources (functions) alternately at the hand control unit and the system foot switch.
- Each time the image source is switched over, the following LEDs must light up in sequence or remain dark at the optional endoscopy interface:
 - Endoscopy input => ultrasound input => no LED => endoscopy input => etc.
- The reference monitor on the TFT support arm shows the reference image mask only if endoscopy/ultrasound is not selected. Otherwise the reference image mask is switched off.
- Although the two inputs (S-video; video) for a function are identical, the S-video input is recommended because it offers better signal quality. If both inputs are supplied with a signal at the same time, only the S-video signal will be transmitted and visible on the monitor.
- Settings for reference monitor M2 on the TFT support arm:

NOTE

The following settings for reference monitor M2 only apply to the monitor type SCD 1897-M.

- With the OSD switched off, press the third key from the top (key with dark triangle).

Designation	Setting
Saturation	n.n. - do not change
HUE	n.n. - do not change
Sharpness	n.n. - do not change
Video Type	DVD
Video 90°	Off

- Terminate the menu.
- For further information see document "UROSOP ACCESS; Troubleshooting Guide Endoscopy Option" (SPL5-330.840.01).

KermaX measuring device

Replacing the chamber

- Move the table into -90° position.
- Switch system **off**.
- Replace the measuring chamber in the collimator.
- Switch system **on**.

Checking the KermaX measuring device

- Move the table into 0° position.
- Perform the check according to document “POLYDOROS SX65/80; Installation and Startup; KermaX Area Dose Product Measuring System” (RX63-055.033.01).

Mechanical components

General information

No detailed description (e.g., removing all screws of a motor) is provided. The number and size of the screws as well as the sequence of disassembly and assembly will become obvious as the work is performed.

Any subsequently required function tests are described in the XCS SSW and UROSKOP Access SSW.

In this document we refer to the relevant screen in the SSW.

Cable harnesses

- The UROSKOP Access specification offers different system cable lengths.
- The system cable from the **generator** => to the **unit** comprises the following cable connections:
 - W100, W150, W400, (W170)
- The system cable from the **imaging system** => to the **generator and unit** comprises the following cable connection:
 - W360, W600, W650
- The system cable connections from the generator to the imaging system container and the system cable connection from the generator to the unit (UROSKOP Access) are presented in the following table:

Tab. 7

System cable	Length in m ¹⁾	Remarks
W100	8 m or 15 m	High-voltage cable and control cable
W150	8 m or 15 m	Control cable
W400	8 m or 15 m	Power cable and control cable
W170	18 m Standard	Camera cable included in system cable W150
W360	20 m	Control cable
W600	18 m	Power cable and control cable
W650	12 m or 18 m	Video cable and control cable

1. The cable lengths correspond to the specifications in the document "Planning Guide" for the max. distance between fixed points.

Chapter 2	Links repaired in subchapter (Multileaf collimator, complete / p. 18): last bullet item; links repaired in subchapter (Replacing the X-ray tube assembly / p. 21): last three bullet items
Chapter 5	Link added in subchapter (Replacement of top cover of imaging container / p. 59): bullet item "Create a strain relief as shown..."
Chapter 8	deleted
Chapter 9	deleted

